GREENHOUSE GAS EMISSIONS INVENTORY

2021

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1. Purpose

Somec Group, with the aim of improving its understanding around the overall impacts the business generates across the whole value chain, has decided to start a path of reporting its greenhouse gas emissions (also “GHG emissions”).

The Company's GHG inventory has been drafted in compliance with the *GHG Protocol Corporate Accounting and Reporting Standard – Revised Edition*. This document summaries the organizational boundaries, the emission categories considered, the methodologies applied, the emission factors used and the final results.

If Scope 1 and Scope 2 GHG emissions have already been disclosed within Somec 2021 Non-Financial Disclosure (also “Dichiarazione Non Finanziaria”, DNF), starting from 2021, Somec has decided to expand the reporting scope to include Scope 3 emissions, estimated in accordance with the GHG Protocol. More in detail, the Group has decided to report the following Scope 3 emission categories:

- **Cat. 1 – Purchase of goods and services**
- **Cat. 3 – Fuel and energy-related activities**
- **Cat. 5 – Waste generated by operations**
- **Cat. 6 – Business travel**
- **Cat. 7 – Employees commuting**

2. Company and inventory boundaries

Somec Group is one of the world's leading players in the design, manufacturing, and implementation of large projects in the marine and civil sectors. Areas of activity include the production of glass façades and special architectural projects, public areas development and the production of professional kitchens. The Group's strategy aims to consolidate, through focused acquisitions and expansions, the ability to understand major customers' needs and to develop innovative solutions that can rely on a wide variety of highly specialized expertise. In 2021, the Group comprised about 28 subsidiaries.

The organizational boundary considered for the GHG Inventory comprises companies located in Italy, USA, Canada, Slovakia:

- **Scope 1 and Scope 2:**
  Fabbrica LLC, Fabbrica Works Srl, Gico Spa, Hysea Srl, Inoxtrend Srl, Navaltech LLC, Oxin Srl, Pizza Group Srl, Primax Srl, Somec Spa, Squadra Srl, Skillmax Srl, Sotrade Sro, TSI Srl

- **Scope 3:**
  - **Cat. 1 - Purchase of goods and services:** Fabbrica LLC, Gico Spa, Oxin Srl, Pizza Group Srl, Primax Srl, Somec Spa.
  - **Cat. 3 - Fuel and energy-related activities:** Fabbrica LLC, Fabbrica Works Srl, Gico Spa, Hysea Srl, Inoxtrend Srl, Navaltech LLC, Oxin Srl, Pizza Group Srl, Primax Srl, Somec Spa, Squadra Srl, Skillmax Srl, Sotrade Sro, TSI Srl.
  - **Cat. 5 - Waste generated by operations:** Fabbrica LLC, Fabbrica Works Srl, Gico Spa, Hysea Srl, Inoxtrend Srl, Oxin Srl, Pizza Group Srl, Primax Srl, Skillmax Srl, Somec Spa, TSI Srl.
  - **Cat. 6 - Business travel:** Fabbrica LLC, Gico Spa, Hysea Srl, Inoxtrend Srl, Oxin Srl, PizzaGroup Srl, Primax Srl, Somec Spa, Skillmax Srl, TSI Srl.
  - **Cat. 7 – Employees commuting:** Atelier de Façade Montréal Inc, Fabbrica LLC, Fabbrica Works Srl, Gico Spa, Hysea Srl, Inoxtrend Srl, Oxin Srl, PizzaGroup Srl, Primax Srl, Skillbuild Srl, Skillmax Srl, Somec Spa, Squadra Srl, TSI Srl.

The stated inventory reporting period is comprised between January 2021 and December 2021.

The majority of reported GHG emissions by Somec Group is carbon dioxide equivalent (CO_{2e}). Oxidation factor is always assumed to be equal to 1.

The inventory has not been subjected to external verification.

3. Emission sources and categories

Somec Group identified its main sources of GHG emissions by following the guidelines published in the *GHG Protocol Corporate Accounting and Reporting Standard*: "Appendix D - Industry Sectors and Scopes," which lists GHG sources and activities along the value chain for different industry scopes. For the calculation of Scope 3, the process relied on two additional documents, namely the "Corporate Value Chain (Scope 3) Accounting and Reporting Standard - Supplement to the GHG Protocol Corporate Accounting and Reporting Standard" and the "Technical Guidance for Calculating Scope 3 Emissions - Supplement to the Corporate Value Chain (Scope 3) Accounting & Reporting Standard" published by the GHG Protocol.

The emission categories considered are the following:

SCOPE	CATEGORY and SOURCE
SCOPE 1 (*Direct GHG emissions*)	► STATIONARY COMBUSTION: – HEAT AND OVEN TESTING: natural gas and LPG. ► MOBILE COMBUSTION: – CAR FLEET: diesel and petrol consumption. ► FUGITIVE EMISSIONS: – Leakages of refrigerant gases from air-conditioning systems.
SCOPE 2 *(Energy indirect GHG emissions)*	► STATIONARY COMBUSTION: – Electricity purchased from the national grid.
SCOPE 3 (*Other indirect GHG emissions*)	► CAT. 1 – PURCHASED GOODS & SERVICES: – Upstream emissions from the production of products purchased or acquired. ► CAT. 3 – FUEL AND ENERGY-RELATED ACTIVITIES: – Emissions related to the production of fuels and energy purchased and consumed. ► CAT. 5 – WASTE GENERATED IN OPERATIONS: – Emissions from third-party disposal and treatment of waste generated by the company's owner or controlled operations. ► CAT. 6 – BUSINESS TRAVEL: – Emissions from the transportation of employees for business-related activities.

SCOPE	CATEGORY and SOURCE
	► CAT. 7 – EMPLOYEES COMMUTING: – Emissions from the transportation of employees between their homes and their worksites.

4. Methodologies and emission factors

The Group has calculated its GHG emissions through the application of documented emission factors. These factors are calculated ratios relating GHG emissions to a proxy measure of activity at an emissions source. The formula applied is:

*GHG Emissions = Emission factor * Activity data*

The main sources of the emission factors considered are identified based on the following databases:

- **DEFRA (Department for Environmental, Food & Rural Affairs):** it is the UK government department; its database contains EFs for Scope 1, Scope 2, and Scope 3 emissions.
- **TERNA:** it is a major European operator in power transmission networks. Emission factors, used to calculate Scope 2 Location-Based GHG emissions, are expressed in CO_2, as TERNA does not consider the greenhouse effect of methane and nitrous oxide.
- **AIB:** European Attribute Mixes (EAM) and residual mixes are reported for all countries by the Association of Issuing Bodies. This source was used to calculate Scope 2 Market-Based GHG emissions deriving from the electricity purchased in Europe.
- **GREEN-E:** it publishes residual mix emission rates using voluntary Green-e® renewable energy sales in the U.S. market. The residual mix emission rate used must be based on the eGRID subregion in which the electricity is purchased.
- **ECOINVENT:** its database covers life cycle inventory (hereafter "LCI") and provides well-documented process data for thousands of different products and processes. EcoInvent database contains EF for Scope 3.1 emissions (Purchased Goods and Services).

The following paragraphs will explain the data and emission factors applied, by emission source. Any exception and assumption considered during the emission categories calculation is duly specified in the corresponding section.

4.1 *Scope 1*

The Corporate Standard, for Scope 1, requires quantifying emissions from natural gas and other fossil fuel consumptions, fluorinated gas emissions, as well as emissions from transportation activities under the company's control.

GHG emissions Scope 1 - 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Natural gas for heating and oven testing	Fuel consumption [m^3]	DEFRA, 2021	2.02 [$kgCO_{2e}/m^3$]	CO_2 equivalent has been considered.
LPG for heating and oven testing	Fuel consumption [l]		1.56 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.
Fuels for car fleet (property and long-term leasing)	Fuel consumption (diesel) [l]		2.71 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.
	Fuel consumption (petrol) [l]		2.34 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.

GHG emissions Scope 1 - 2021

Emission source	Activity data	Global Warming Potential		GWP
		Source	CO_2 / activity data	
Leakages from air-conditioning systems of refrigerant gases	Leakages (R410A) [kg]	DEFRA 2021	2,088.00 [$kgCO_{2e}$/kg]	IPCC Fifth Assessment Report (AR5)
	Leakages (R407C) [kg]		1,774.00 [$kgCO_{2e}$/kg]	
	Leakages (R427A) [kg]	IPCC Fifth Assessment Report (AR5)	2,138.25 [$kgCO_{2e}$/kg]	

The assumptions made are as follows:

- For car fleet emissions, using a conservative approach, long term-leased vehicles are considered as they were property assets as per Scope 1 accounting.
- The refrigerant gas amount released in the atmosphere have been supposed to be equal to the total amount of gases added to the air conditioning devices for cooling during the reporting year. For the plants based in Italy, data source for refrigerant gases refilling is the “FGas Declaration”, which is mandatory for the devices with a capacity of more than 3kg of refrigerant gases (D.P.R. n. 43/2012). GWPs have been calculated considering the refrigerant gases composition and blends found on maintenance report.

4.2 *Scope 2*

The Corporate Standard requires organizations to quantify emissions from the generation of purchased and consumed electricity, steam, heat, or cooling. These are considered as an indirect emission source since they are a consequence of the reporting organization's activities but occur at sources owned or controlled by another organization. Scope 2 emissions are calculated with two different approaches:

- **Location-Based Approach:** this method is based on an average emissions factor related to the national energy mix specific to each country in which Somec Group operates. The higher the share of renewable energy used within the country the lower the associated emissions factor.
- **Market-Based Approach:** this method considers the renewable electricity purchased. Following this approach, a zero emissions factor is applied to any share of renewable energy that has been purchased with Guarantee of Origin (GO) certificates. The remaining purchased energy is considered through an emission factor that considers the residual mix of the market, that reflects the energy share produced by non-renewable sources.

GHG emissions Scope 2 – Location-Based approach – 2021				
Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Electricity purchased from the national grid	Electricity consumption [kWh]	Terna, Confronti Internazionali, 2019 data	ITALY 315.00 [gCO_2/kWh] US 374.00 [gCO_2/kWh]	Only CO_2 has been considered.

GHG emissions Scope 2 – Market-Based approach – 2021				
Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Electricity purchased from national grid	Electricity consumption [kWh]	AIB, European Residual Mixes, 2020 data	ITALY 458.57 [gCO_{2e}/kWh]	CO_2 equivalent has been considered.
		Green-e (NYLI), 2019 data	US 1,208.98 [lb CO_2/MWh]	CO_2 has been considered.

4.3 *Scope 3*

Scope 3 indirect emissions include all indirect emissions not reported in Scope 2 and occurring across the value chain of the reporting Company. Scope 3 emissions are classified into 15 categories, subdivided into upstream and downstream activities.

Somec Group, for the reporting year 2021, estimated the following categories' selection:

- **Cat. 1 – Purchased goods & services**
- **Cat. 3 – Fuel and energy-related activities**
- **Cat. 5 – Waste generated in operations**
- **Cat. 6 – Business travel**
- **Cat. 7 – Employees commuting**

GHG emissions Scope 3 – Cat. 1: Purchased goods & services – 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Purchased Products Production	Purchased Products (Aluminum) [kg]	DEFRA 2021	9,122.64 [$kgCO_{2e}$/ton]	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Stainless steel) [kg]	DEFRA 2021	3,100.64 [$kgCO_{2e}$/ton]	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Carbon steel) [kg]	DEFRA 2021	3,100.64 [$kgCO_{2e}$/ton]	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Zama) [kg]	DEFRA 2021	9,122.64 [$kgCO_{2e}$/ton] Aluminum cans and foil	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Brass) [kg]	Ecoinvent	Brass production (CH)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Glass) [kg]	Ecoinvent	Flat glass production, uncoated (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Lubricant) [kg]	Ecoinvent	Lubricating oil production (RER - RoW)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Solvent) [kg]	Ecoinvent	Solvent production, organic (GLO)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Seal) [kg]	Ecoinvent	Bitumen seal production (RER - RoW)	CO_2 equivalent has been considered.

Purchased Products Production	Purchased Products (Screws and Hilti components) [kg]	Ecoinvent	Pig iron production (RER)	CO_2 equivalent has been considered.
		DEFRA 2021	3,100.64 [kgCO_{2e}/ton] Metal steel cans	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Stone wool) [kg]	Ecoinvent	Stone wool production (RoW)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Plastic) [kg]	DEFRA 2021	3,116,29 [kgCO_{2e}/ton] Average plastics	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Fittings) [kg]	DEFRA 2021	9,122.64 [kgCO_{2e}/ton] Aluminum cans and foil	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Salt for insulating) [kg]	Ecoinvent	Soda production, solvay process (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Insulation) [kg]	DEFRA 2021	1,861.76 [kgCO_{2e}/ton]	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Powder coatings) [kg]	Ecoinvent	Polyester resin production, unsaturated (RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Polyethylene production, low density, granulate (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Coating powder production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Liquid Paints) [kg]	Ecoinvent	Chemical production, organic (GLO)	CO_2 equivalent has been considered.

		Ecoinvent	Alkyd paint production, white, water-based, product in 60% solution state (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Resins) [kg]	Ecoinvent	Butadiene production (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Dicyclopentadiene based unsaturated polyester resin production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Wood) [kg]	DEFRA 2021	312,61 [$kgCO_{2e}$/ton]	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Cardboard) [kg]	Ecoinvent	Containerboard production, linerboard, kraft liner (RER – RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Containerboard production, fluting medium, semichemical (RER – RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Corrugated board box production (RER – RoW)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Nylon 6) [kg]	Ecoinvent	Nylon 6 production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Polystyrene) [kg]	Ecoinvent	Polystyrene production, general purpose (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (PVC) [kg]	Ecoinvent	Polyvinylchloride production, emulsion polymerization (RER)	CO_2 equivalent has been considered.

		Ecoinvent	Vinyl chloride production (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Ethylene production, average (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (PET) [kg]	Ecoinvent	Polyethylene terephthalate production, granulate, amorphous (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (PE) [kg]	Ecoinvent	Polyethylene production, low density, granulate (RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Ethylene production, average (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (PP) [kg]	Ecoinvent	Polypropylene production, granulate (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Propylene production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Rubber) [kg]	Ecoinvent	Synthetic rubber production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Nylon 6) [kg]	Ecoinvent	Nylon 6 production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Polyamide) [kg]	Ecoinvent	Nylon 6 production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Polycarbonate) [kg]	Ecoinvent	Polycarbonate production (RER)	CO_2 equivalent has been considered.

Purchased Products Production	Purchased Products (Polymethylmethacrylate) [kg]	Ecoinvent	Polymethyl methacrylate production, sheet (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Grease) [kg]	Ecoinvent	Lubricating oil production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Polytetrafluoroethylene) [kg]	DEFRA 2021	3,116,29 [kgCO_{2e}/ton] Average plastics	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Polyurethane) [kg]	Ecoinvent	Polyurethane production, flexible foam (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Polyol production (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Toluene diisocyanate production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Electric motor) [kg]	Ecoinvent	Copper production, cathode, solvent extraction and electrowinning process (GLO)	CO_2 equivalent has been considered.
		DEFRA 2021	9,122.64 [kgCO_{2e}/ton] Aluminum cans and foil (Primary material production)	CO_2 equivalent has been considered.
		DEFRA 2021	3,100.64 [kgCO_{2e}/ton] Metal steel cans	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Other metal hobs) [kg]	DEFRA 2021	3,100.64 [kgCO_{2e}/ton] Metal steel cans	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Paper) [kg]	DEFRA 2021	919.40 [kgCO_{2e}/ton] Paper and board	CO_2 equivalent has been considered.

Purchased Products Production	Purchased Products (Nitrogen) [kg]	Ecoinvent	Air separation, cryogenic (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Heating elements) [kg]	Ecoinvent	Copper production, cathode, solvent extraction and electrowinning process (GLO)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Cooking plates) [kg]	Ecoinvent	Cast iron production (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Pig iron production (RER)	CO_2 equivalent has been considered.
		DEFRA 2021	3,100.64 [kgCO_{2e}/ton] Metal steel cans	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Cast iron components) [kg]	Ecoinvent	Cast iron production (RER)	CO_2 equivalent has been considered.
		Ecoinvent	Pig iron production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Phenolic resin) [kg]	Ecoinvent	Phenolic resin production (RER)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (Isopropanol) [kg]	Ecoinvent	Isopropanol production (RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Propylene production (RoW)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (LLDPE) [kg]	Ecoinvent	Ethylene production, average (RoW)	CO_2 equivalent has been considered.

		Ecoinvent	Polyethylene production, linear low density, granulate (RoW)	CO_2 equivalent has been considered.
Purchased Products Production	Purchased Products (LDPE) [kg]	Ecoinvent	Ethylene production, average (RoW)	CO_2 equivalent has been considered.
		Ecoinvent	Polyethylene production, low density, granulate (RoW)	CO_2 equivalent has been considered.

GHG emissions Scope 3 – Cat. 3: Fuel and energy-related activities - 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Upstream Emissions of purchased fuels	Fuel consumption (Natural gas) [m^3]	DEFRA 2021	0.35 [$kgCO_{2e}/m^3$]	CO_2 equivalent has been considered.
Upstream Emissions of purchased fuels	Fuel consumption (LPG) [l]	DEFRA 2021	0.18 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.
Upstream Emissions of purchased fuels	Fuel consumption (Diesel) [l]	DEFRA 2021	0.61 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.
Upstream Emissions of purchased fuels	Fuel consumption (Petrol) [l]	DEFRA 2021	0.61 [$kgCO_{2e}$/l]	CO_2 equivalent has been considered.
Upstream Emissions of purchased electricity	Electricity consumption Italy [kWh]	DEFRA 2021	ITALY: 0,09 [$kgCO_{2e}$/kWh] US: 0,11 [$kgCO_{2e}$/kWh]	CO_2 equivalent has been considered.
Transmission and Distribution losses	Electricity consumption USA [kWh]	DEFRA 2021	ITALY: 0,01 [$kgCO_{2e}$/kWh] US: 0,01 [$kgCO_{2e}$/kWh]	CO_2 equivalent has been considered.

GHG emissions Scope 3 – Cat. 5: Waste Generated in operations - 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Waste generated in operations	Metal: Scrap Metal (Open loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Metal: Aluminum cans and foil (Open loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Metal: Steel Cans (Open loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Construction: Wood (Open loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Construction: Bricks (Landfill) [ton]	DEFRA 2021	1.24 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Construction: Insulation (Landfill) [ton]	DEFRA 2021	1.24 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Other: Clothing (Landfill) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Other: Clothing (Closed loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Other: Glass (Open loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.

Waste generated in operations	Paper: Paper and board mixed (Closed loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Plastic: average plastics film (Closed loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Plastic: Average plastics (Closed loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Refuse: Commercial and industrial waste (Closed loop) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Refuse: Commercial and industrial waste (Landfill) [ton]	DEFRA 2021	467. 05 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Refuse: Commercial and industrial waste (Combustion) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Plastic: Average plastics (Combustion) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Electrical items: WAEE-mixed (Combustion) [ton]	DEFRA 2021	21.29 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Construction: Aggregates (Landfill) [ton]	DEFRA 2021	1.24 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.
Waste generated in operations	Refuse: Household residual waste (Landfill) [ton]	DEFRA 2021	446.24 [kg CO_{2e}/ton]	CO_2 equivalent has been considered.

GHG emissions Scope 3 – Cat. 6: Business travels – 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Business travels by air	Flights: Average passengers [passenger*km]	DEFRA 2021	INTERNATIONAL: 0.09 [kg CO_{2e}/passenger*km] SHORT-HAUL: 0.08 [kg CO_{2e}/passenger*km] DOMESTIC: 0.13 [kg CO_{2e}/passenger*km]	CO_2 equivalent has been considered.
	Distance covered per passenger [passenger*km]	ICAO 2018	-	Only CO_2 has been considered.
Business travels by car	Car (by size): Average car [km]	DEFRA 2021	0.17 [kg CO_{2e}/km]	CO_2 equivalent has been considered.
Business travels by train	Rail: National rail [passenger*km]	DEFRA 2021	0.03 [kg CO_{2e}/passenger*km]	CO_2 equivalent has been considered.
	Distance covered per passenger [passenger*km]	Ferrovie dello Stato 2021	0.03 [kg CO_{2e}/passenger*km]	CO_2 equivalent has been considered.
Business travels by ship	Ferry: Average (all passenger) [passenger*km]	DEFRA 2021	0.11 [kg CO_{2e}/passenger*km]	CO_2 equivalent has been considered.

GHG emissions Scope 3 – Cat. 7: Employees commuting – 2021

Emission source	Activity data	Emission factors		GWP
		Source	CO_2 / activity data	
Commuting with an owned car (unknown fuel)	Car (by size): Average car [km]	DEFRA 2021	0.17 [kg CO_{2e}/km]	CO_2 equivalent has been considered.

The limitations, omissions and assumptions made for each emission category are listed below:

- **Cat. 1 - Purchase of goods and services**
  The calculations considered the cradle-to-gate emissions pertaining to each material and product purchased. Given the lack of emission factors' availability in literature, assumptions were made for some materials. Furthermore, given the lack of primary data concerning the composition of some semi-finished and finished products, estimations were made on the materials to be considered. In addition, electrical materials and induction generators were excluded since it was not possible to esteem their composition.

- **Cat. 5 - Waste generated by operations**
  It was assumed that activities reported by companies as *other forms of recovery* were classified as recycling activities, while activities under *other disposal operations* were classified as landfill. In addition, if data were available in literature, it was assumed that recycling activities are related to an "Open-loop" cycle.

- **Cat. 6 - Business travel**
  For Somec Spa air travel emissions, emissions calculated according to ICAO methodology[1] and provided by flight agencies were used. DEFRA factors were used for emission estimations from other companies' air travels. In this case, emission factors were considered by distinguishing the distance of the routes as domestic (routes less than 800 km), short-haul (routes between 800 km and 3700 km), and international (routes greaten than 3700 km). The Radiative forcing (RF) was not considered.

- **Cat. 7 – Employees commuting**
  Emissions resulting from employees commuting have been estimated based on employee's residence ZIP codes. The distance between the point of departure and the point of arrival has been calculated and expressed in km. Distances exceeding 250 km have been excluded from the calculations. In addition, due to the lack of specific information on the type of cars and fuels used, the EF used considers an average car with a generic, unknown fuel.

[1] Source: Methodology ICAO Carbon Calculator_v11-2018.pdf

5. GHG Emissions

In the table below are reported Somec Group's total GHG emissions for 2021.

GHG EMISSIONS	UoM	2021
DIRECT EMISSIONS (SCOPE 1)	**tCO_{2e}**	**1,461.65**
- emissions resulting from natural gas used for heating and oven testing	*tCO_{2e}*	*1,054.08*
- emissions resulting from LPG for heating purposes and oven testing	*tCO_{2e}*	*20.98*
- emissions resulting from diesel used for Company's car fleet (long term leasing and owned car)	*tCO_{2e}*	*334.83*
- emissions resulting from gasoline used for Company's car fleet (long term leasing and owned car)	*tCO_{2e}*	*36.84*
- emissions of refrigerant gases resulting from leakages of air-conditioning systems	*tCO_{2e}*	*14.94*
INDIRECT EMISSIONS (SCOPE 2) – LOCATION BASED APPROACH	**tCO_2**	**1,370.32**
INDIRECT EMISSIONS (SCOPE 2) – MARKET BASED APPROACH	**tCO_{2e}**	**1,621.61**
OTHER INDIRECT EMISSIONS (SCOPE 3)	**tCO_{2e}**	**56,909.10**
Cat. 1 – Purchased goods & services	*tCO_{2e}*	*54,031.81*
Cat. 3 – Fuel and energy-related activities	*tCO_{2e}*	*597.51*
Cat. 5 – Waste generated in operations	*tCO_{2e}*	*302.80*
Cat. 6 – Business travel	*tCO_{2e}*	*91.10*
Cat. 7 – Employees commuting	*tCO_{2e}*	*1,885.88*
TOTAL – SCOPE 1, SCOPE 2 LOCATION-BASED, SCOPE 3	**tCO_{2e}**	**59,741.07**
TOTAL – SCOPE 1, SCOPE 2 MARKET-BASED, SCOPE 3	**tCO_{2e}**	**59,992.36**

Acronyms and Definitions	
Acronym	**Definition**
GHG	Greenhouse gases
EF	Emission factor
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
GO	Guarantee of Origin