

CareCare Oy



# Carbon footprint fiscal year 2022-2023, Scope 1-3

Report

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Etteplan Finland Oy

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# 1. Glossary

Term	Definition
CO <sub>2</sub> equivalent (CO <sub>2</sub> e)	The universal unit of measurement to indicate the global warming potential (GWP) of the greenhouse gases, expressed in terms of the GWP of one unit of carbon dioxide.
Direct GHG emissions (scope 1 inventory)	Emissions from sources that are owned or controlled by the reporting company.
Emission factor	A factor that converts activity data into GHG emissions data (e.g., kg CO <sub>2</sub> e emitted per liter of fuel consumed, kg CO <sub>2</sub> e emitted per kilometer traveled, etc.).
Greenhouse gas (GHG)	GHG Protocol accounts for the seven gases covered by the UNFCCC: carbon dioxide (CO <sub>2</sub> ); methane (CH <sub>4</sub> ); nitrous oxide (N <sub>2</sub> O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF <sub>6</sub> ), and nitrogen trifluoride (NF <sub>3</sub> ).
Indirect GHG emissions	Emissions that are a consequence of the operations of the reporting company but occur at sources owned or controlled by another company. This includes scope 2 and scope 3.
Location-based method for scope 2 accounting	A method to quantify scope 2 GHG emissions based on average energy generation emission factors for defined locations, including local, subnational, or national boundaries.
Market-based method for scope 2 accounting	A method to quantify scope 2 GHG emissions based on GHG emissions emitted by the generators from which the reporter contractually purchases electricity bundled with instruments, or unbundled instruments on their own.
Residual mix	The mix of energy generation resources and associated attributes such as GHG emissions in a defined geographic boundary left after contractual instruments have been claimed/retired/canceled. The residual mix can provide an emission factor for companies without contractual instruments to use in a market-based method calculation.
Scope 2 inventory	A reporting organization's emissions associated with the generation of electricity, heating/cooling, or steam purchased for own consumption.
Scope 3 inventory	A reporting organization's indirect emissions other than those covered in scope 2.
Value chain emissions	Emissions from the upstream and downstream activities associated with the operations of the reporting company.

## 2. Basic information

- Regional Council of North Karelia has procured carbon footprint calculations for two companies, and the studies have been conducted by Etteplan Finland Oy. In this report, results are presented for CareCare Oy.
- CareCare Oy is a Finnish company specialized in producing products that help to mobilise and transfer people in challenging situations, often after an illness or an accident. CareCare products use both sliding motion and grip when it comes to changing the position in bed or starting moving and rehabilitating without the fear of slipping.
- CareCare's carbon footprint was calculated based on the Greenhouse Gas Protocol standards: (e.g., *Corporate Accounting and Reporting Standard*, and *Corporate Value Chain (Scope 3) standard*). Calculation was conducted for the fiscal year 07/2022-06/2023, and operational control approach was applied.
- The carbon footprint has been calculated based on the data received from the Client. The Client is responsible for the accuracy of the provided data.
- Only those functions and locations that are presented in this report have been included in the calculation. If some functions or entities are excluded from the calculation, the results cannot be fully generalized to the entire organization.
- Calculation covers scope 1 and 2 emissions from CareCare's operations, as well as the relevant emissions under scope 3 category. The included emission categories are presented in slide 8.
- The results are not absolute values, and uncertainties related to the calculation should be taken into account, when interpreting the results.
- Carbon footprint calculation and study report are not assured by a third party. Third party assurance is voluntary. The results of the carbon footprint calculation can be communicated to a third party when the content of this slide is presented in connection with the presentation of the results.

Comissioner of  
the study



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study



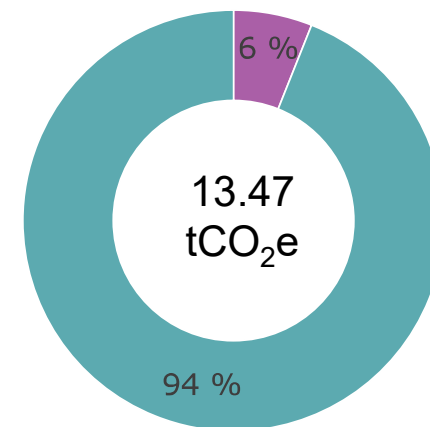
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# 3. Summary

- Calculation covers emissions from CareCare's business operations during 1.7.2022-30.6.2023, including energy use in the office and warehouse in Joensuu, Finland, as well as other relevant supply chain emissions.
- The market-based carbon footprint was 13.5 t CO<sub>2</sub>e. This is comparable to average annual carbon footprint of ca. 1.3 Finns\*.
- CareCare's operations did not cause any direct emissions (scope 1).
- Scope 2 emissions include electricity and heat use at CareCare's office and warehouse, and these emissions were ca. 815 kg CO<sub>2</sub>e corresponding to ca. 6 % of the total emissions.
- Scope 3 accounts for the major share of emissions (ca. 94 %), where purchased products and services had the greatest impact on the results. For example, production of CareCare's main product, i.e., grip socks, is subcontracted, and the related emissions are recognized under scope 3.

Total results, 2022-2023  
Market-based



■ Scope 1 in total   ■ Scope 2 in total   ■ Scope 3 in total

\*Average annual emissions of a Finn were ca. 10.5 t CO<sub>2</sub>-eq in 2015  
<https://kulutus.hiilineutraalisuomi.fi/>

# 4. Methodology and data of the calculation



# Organizational carbon footprint study following the Greenhouse gas Protocol

Greenhouse gas (GHG) Protocol is a widely applied methodology for calculating carbon footprint for organization.

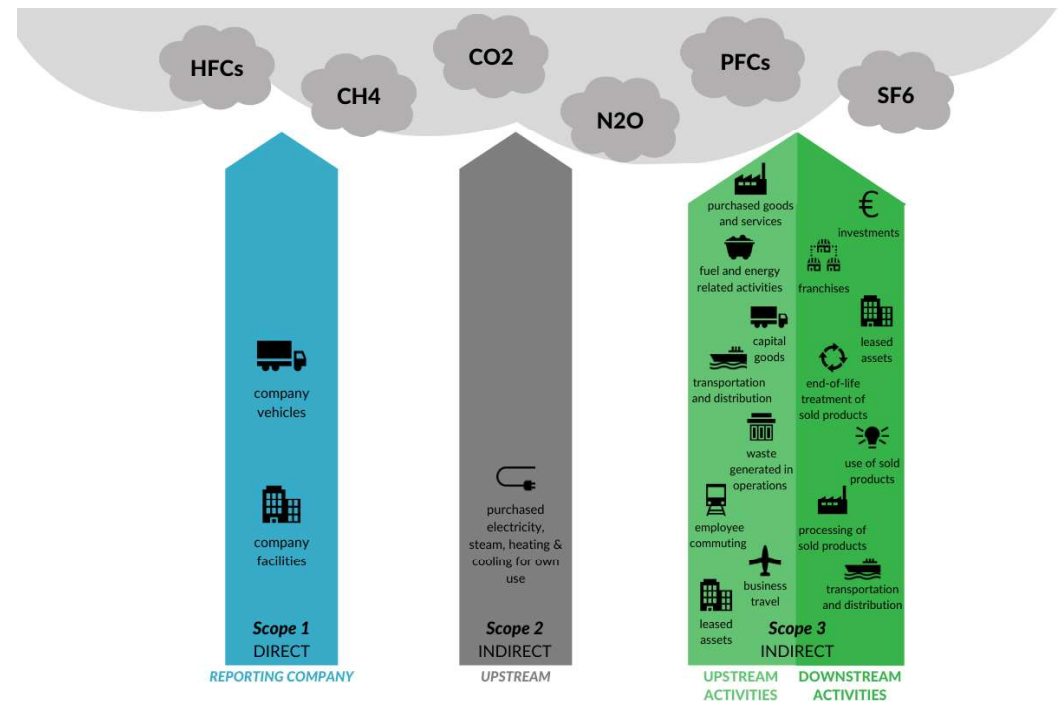
The emissions are presented in three scopes:

**Scope 1:** Direct emissions from own operations

**Scope 2:** Purchased energy (electricity, heat, cooling)

**Scope 3:** Other in value chain

The calculation methodology in in connection with e.g., Science Based Targets initiative (SBTi) and sustainability reporting schemes.



# Overview of used data and emission factors

- The carbon footprint has been calculated mostly based on the activity data received from CareCare Oy. In addition, some estimates were made based on the available information from CareCare or literature. Main assumptions of the calculations and overview of the collected activity data is collated in the tables presented in Appendix 1.
- There were no identified direct (scope 1) emissions. Indirect emissions occurred from the generation of purchased energy (scope 2 emissions), and in the value chain (scope 3).
- CareCare office operates in the personal apartment of the CEO, and the electricity consumption of CareCare operations was estimated based on the change in consumption during the calculation and comparison year (before office was founded in the apartment). District heat consumption was estimated based on the typical heat consumption per square meter (m<sup>2</sup>).
- Production of CareCare's main product, grip socks, is subcontracted and the related emissions were estimated based on the product's LCA (life cycle assessment) study conducted for CareCare during 2018-2019. There has been no changes in the production since then, and thus, this approach was considered justifiable. Production emissions were included in the emission category "production of purchased products". Other purchases during the calculation year includes three smart phones, packaging materials for the grip socks, and purchase of business support services.
- Business travel and waste generated in the operations were calculated based on the activity data received from CareCare. Pickup of grip socks from the production site is included in internal transportations (category "other upstream transportation"). Downstream transportation and distribution was organized via Posti Finland, and the emissions were obtained from Posti's emission report for CareCare.
- End-of-life (EoL) emissions include EoL treatment of grip socks (incineration) and packaging material (incineration assumed for the plastic bags and recycling process for the cardboard boxes).
- The emission factors used in the calculations are based on widely-used and trusted sources, including Statistics Finland, The Department for Environment, Food and Rural Affairs (Defra), Finnish Environment Institute, as well as Sphera and ecoinvent Databases
- The greenhouse gas emissions included in the inventory are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>. Characterization factors for each of these individual emissions are used to convert the results in CO<sub>2</sub> equivalents. Biogenic and land use change (LUC)-related CO<sub>2</sub> emissions are excluded.



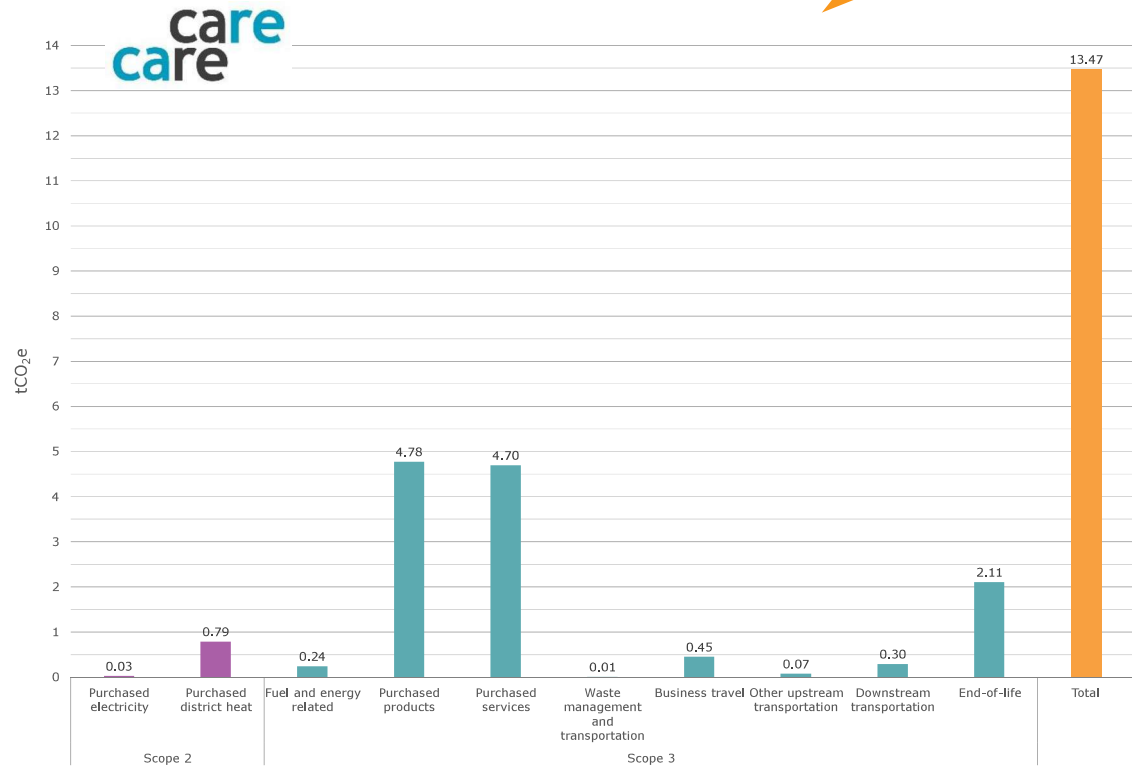
# 5. Results and conclusions



# Results: Market-based

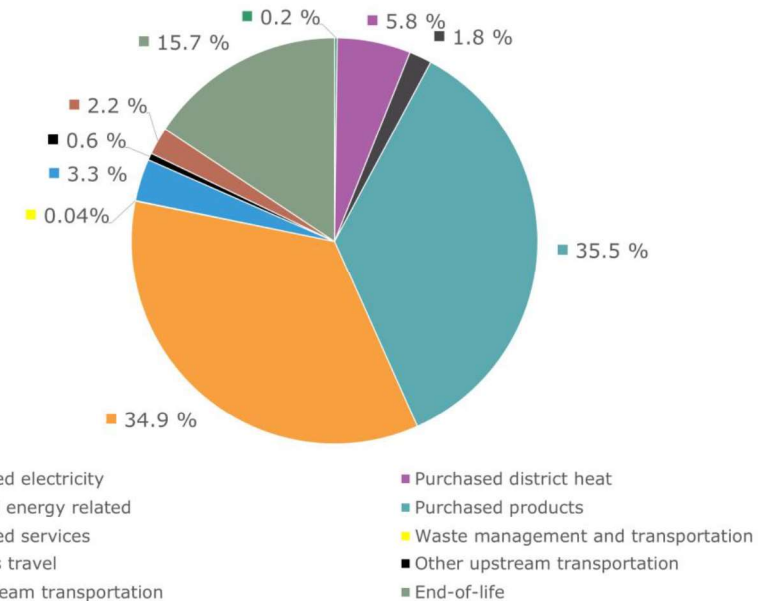
- Market-based emissions refer to the scope 2 market-based calculation, where emissions of electricity consumption are calculated based on the purchased electricity product.
  - CareCare purchases electricity from Pohjois-Karjalan Sähkö (PKS), and the related emissions are calculated based on the production mix declared on the supplier's website.
  - Emission factor calculated based on the supplier information is ca. 405 kgCO<sub>2</sub>/MWh, which is also close to the residual grid mix in Finland. See Appendix 1 for further information.
- CareCare's market-based emissions in total were ca. 13.47 t CO<sub>2</sub>e, in 07/2022-06/2023.
- There were no identified direct (Scope 1) emissions according to the operational control approach applied in the calculations. Company does not own any cars or working machines, and e.g., personal car of the CEO is mostly used in business related transportations. Also, the production of grip socks is subcontracted and included in the value chain emissions (Scope 3).
- Scope 2 includes indirect emissions related to purchased electricity and district heat in CareCare's office and warehouse. Scope 2 accounts for 6 % of the total market-based emissions.
- Scope 3 emissions include other indirect emissions from value chain (including e.g., production of grip socks, business travel and end of life treatment of sold products). Scope 3 emissions account for 94 % of the total emissions.

CareCare's total carbon footprint equals to average annual carbon footprint of ca. **1.3 Finns.**



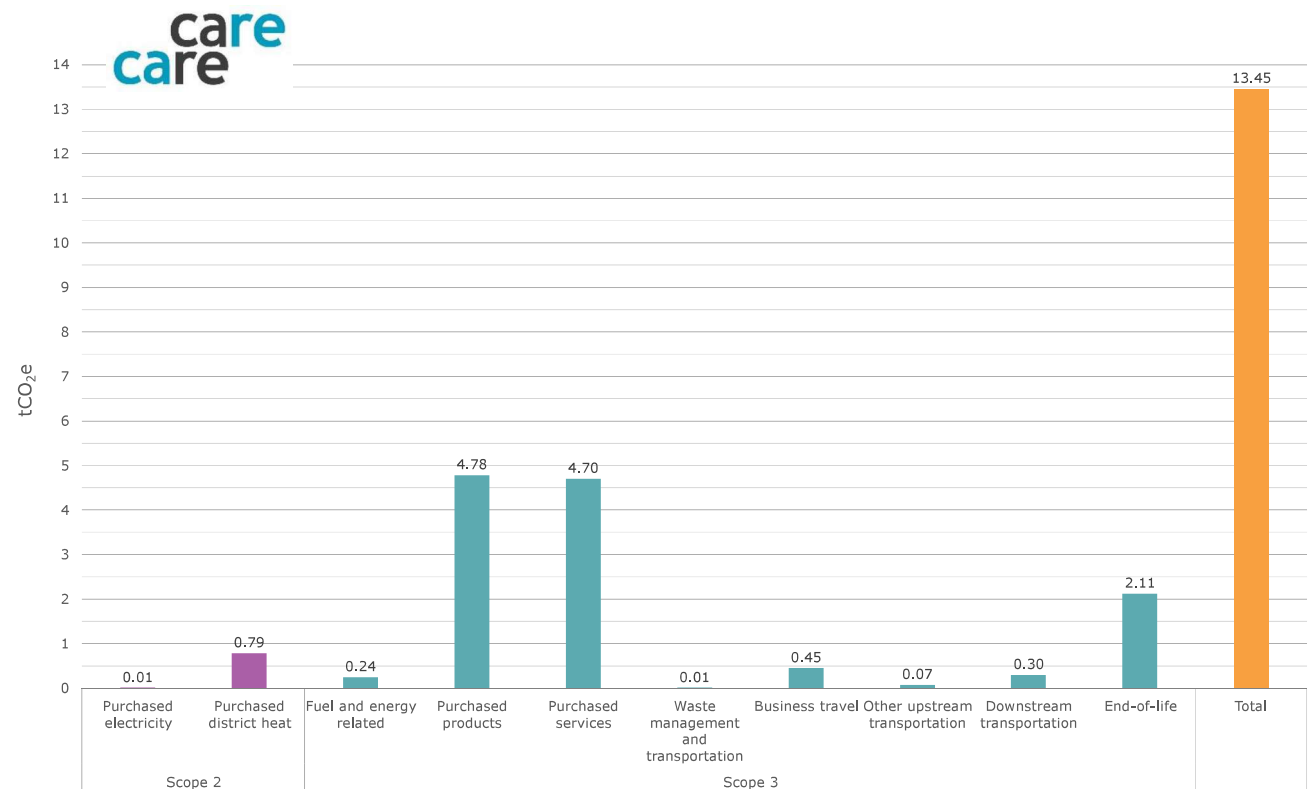
# Results: Market-based

- During the fiscal year 07/2022-06/2023, purchase of products and services accounted for the major share of CareCare’s emissions (ca. 70 % in total).
- Grip socks, which is the main product of the company, accounted for ca. 46 % of the emissions of purchased products and services, and ca. 32 % of the total emissions. Second largest category in terms of emissions was services of marketing, which accounted for ca. 22 % of the emissions of purchased products and services, and ca. 16 % of the total emissions.
- As can be seen from the figure on the right, also EoL emissions accounted for significant share of the total emissions (15.7 %).



# Results: Location-based

- Location-based emissions refer to the scope 2 location-based calculation, where emissions of electricity consumption are calculated based on the average electricity production of the given geographical area. Here, average emissions of electricity production in Finland (95.8 kgCO<sub>2</sub>/MWh) is used in the calculations (Statistics Finland, 2022: Energy and emissions).
- CareCare's location-based emissions in total were ca. 13.45 t CO<sub>2</sub>e, during 07/2022-06/2023. There are no major difference between the market and location-based results due to the marginal electricity use in CareCare's premises.



# Absolute emissions of CareCare's operations in 07/2022-06/2023

Scope	t CO <sub>2</sub> e	% of total emissions
Scope 2, market-based electricity	0.03	0.2 %
* Scope 2, location-based electricity (not included in the total)	0.01	-
Scope 2, district heat	0.79	5.8 %
Scope 3, energy and fuel related	0.24	1.8 %
Scope 3, purchased products	4.78	35.5 %
Scope 3, purchased services	4.70	34.9 %
Scope 3, waste generated in the operations	0.01	0.04 %
Scope 3, business travel	0.45	3.3 %
Scope 3, other upstream transportation	0.07	0.6 %
Scope 3, downstream transportation	0.30	2.2 %
Scope 3, end-of-life treatment of sold products	2.11	15.7 %
<b>Total</b>	<b>13.47</b>	

# Observations and recommendations

- Scope 1:
  - No identified scope 1 emissions.
- Scope 2:
  - Scope 2 emissions caused only a marginal share of the total emissions. However, by purchasing eco-certified renewable electricity 100% reduction in the emission category could be achieved.
  - Energy consumption can also be maintained low by ensuring the use of energy efficient appliances.
- Scope 3:
  - Major share of scope 3 emissions is generated by purchased products (ca. 35 % of the total emissions) and purchased services (ca. 35 % of the total emissions). The emission reduction actions should be targeted to these purchases. Activities should include active collaboration with the suppliers.
  - Scope 3 emissions can be reduced by choosing suppliers that are committed to e.g., renewable energy use, other climate work or circular economy principles. For example, in packaging, renewable materials could be used to minimise emissions.
  - End of life emissions, including waste management of the sold products and used packaging materials, accounted for ca. 16 % of the total emissions. The alternatives for re-use or recycling of the grip socks should be studied.
  - Emissions related to business travel and transportation of the grip socks by car (ca. 4 % of the total emissions) could also be reduced by switching from fossil diesel to renewable diesel, or other alternative fuels in the passenger car used in the transportations.
- Other recommendations:
  - For climate change mitigation, the rapid emission reductions are essential. More precise emission reduction measures, their impacts on costs and emissions, as well as the realistic timing can be planned during the preparation of emission reduction roadmap.
  - Annual tracking of the emissions is recommended, in order to monitor the impact of the emission reduction measures on the total emissions
  - For more accurate carbon footprint calculations, supplier-specific emission factors should be inquired across the supply chain.
  - Life-cycle assessment of CareCare's own products is recommended, as the results can be utilised in the organizational carbon footprint calculations, as well as in marketing and communication purposes

# 6. Contact information



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## Calculation and report

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# Appendix 1.

## Description of scopes, data and main assumptions



# Data – Scope 1

Category	Included and excluded totalities and main assumptions	Sources of emission factor	Representativeness of the results	Methodology
Direct emissions, own operations	There were no identified Scope 1 emissions.			

# Data – Scope 2

Category	Included and excluded totalities and main assumptions	Sources of emission factor	Representativeness of the results	Methodology and other notes
Emissions from electricity production	<p>Total electricity consumption used in the calculations is 70.2 kWh. Used energy product is stock market electricity.</p> <p>Production mix of electricity is assumed based on the production information provided by the supplier (Pohjois-Karjalan Sähkö) as well as based on the share of different fossil fuels in the residual country level grid mix (Energy Authority of Finland, 2022). Emission factor used in the calculations is 405.3 kgCO<sub>2</sub>e/MWh.</p> <p>Assumed production mix of electricity:</p> <ul style="list-style-type: none"> <li><i>Hard coal 34.2 %</i></li> <li><i>Natural gas 7.3 %</i></li> <li><i>Peat 19.4 %</i></li> <li><i>Gasoil, low-sulphur 2.1 %</i></li> <li><i>Other fossil fuels 6 %</i></li> <li><i>Nuclear power 18 %</i></li> <li><i>Renewables 13 %</i></li> </ul>	<p>Statistics Finland. Fuel classification 2022.</p>	<p>Good representativeness. Some uncertainty related to the share of fossil fuels.</p>	<p>Market-based method.</p> <p>Electricity use estimated based on the change in electricity consumption in 2022-2023 (331 kWh) compared to the comparison period 2018-2019 (260.8 kWh).</p>

# Data – Scope 2, *continued*

Category	Included and excluded totalities and main assumptions	Sources of emission factor	Representativeness of the results	Methodology and other notes
Emissions from district heat production	<p>District heat consumption estimated based on the square metres of company office spaces (office 8.5 m<sup>2</sup>, warehouse 19 m<sup>2</sup>). Total estimated district heat consumption used in the calculations 6572.5 kWh.</p> <p>Production emissions of district heat based on the supplier specific information (Savon Voima Oyj, Joensuu). Emission factors are calculated based on the specific fuel use of the energy company from 2022 (Finnish Energy: District heating statistics).</p> <p>Applied production mix of district heat production:</p> <ul style="list-style-type: none"> <li><i>Gasoil, sulphur-free, 0.9 %</i></li> <li><i>Heavy fuel oil, sulphur content &lt;1%, 0.3 %</i></li> <li><i>Milled peat, 27.0 %</i></li> <li><i>Whole-tree chips or logs, 23.8 %</i></li> <li><i>Forest residue chips or crushed material, 14.8 %</i></li> <li><i>Stump wood chips, bark &amp; sawdust, 1.1 %</i></li> <li><i>Unspecified industrial wood residues 14.0 %</i></li> <li><i>Recycled wood. 3.8 %</i></li> <li><i>Biogas. 0.4 %</i></li> <li><i>Refined biofuels. 0.7 %</i></li> <li><i>Heat recover, 13.2 %</i></li> </ul>	Statistics Finland. Fuel classification 2022.	Total district heat consumption is estimated which leads to fair representativeness of the results.	<p>Market-based method.</p> <p>District heat consumption estimated as 239 kWh/m<sup>2</sup>/a based on the report by Energy Authority of Finland, 2020: Lämmityksen ja jäähdytyksen käyttäjäkohtainen mittaaminen ja kustannusten jakaminen (heat consumption for residential apartment buildings).</p>

# Data – Scope 3

Category	Included and excluded totalities and main assumptions	Sources of emission factors	Representativeness of the results	Methodology and other notes
Energy and fuel related	<p>Assumed T&amp;D loss in electricity 3 % (see e.g., Finnish Climate Change Panel 2023: Autokalkulaattorin käyttöopas ja laskennan perusteet – henkilöautot).</p> <p>District heat T&amp;D loss for Savon Voima Oyj, Joensuu is 9.9 % based on the district heating statistics (Finnish Energy).</p> <p>Total energy use as in Scope 2. Total diesel consumption of private passenger car used for CareCare's operations is 225 litres (vehicle not owned by the company).</p>	<p>Statistics Finland. Fuel classification 2022.</p> <p>Sphera Databases.</p> <p>DEFRA, 2022. Conversion Factors for Company Reporting.</p>	Good representativeness.	<p>Energy and fuel related upstream and T&amp;D (transport and distribution) emissions are calculated based on the energy and fuel consumption of CareCare Oy operations.</p> <p>Energy and fuel related scope 3 emissions other than those related to scope 2 or consumed diesel in private passenger car are included in other emission categories and are not separated here.</p>
Purchased products and capital goods	<p>Following purchases were included in the calculation:</p> <p><i>Grip socks, 22 583 pairs</i>  <i>Smart phones, 3 pcs</i>  <i>Plastic bags for the grip socks, 1000 pcs</i>  <i>Cardboard boxes for the grip socks, 1985 pcs</i></p>	<p>Report (updated 2019).  Elinkaariklinikka: IGS-pitosukan (10 kpl) tuotanto ja pakkaaminen.</p> <p>Ministry of Transport and Communications (2020).  Material, energy and climate issues related to ICT devices in Finland.</p> <p>CO2data. Water vapour barrier, PE. A1-A3 typical value.</p> <p>EcoInvent 3.9.1. RoW:  Corrugated board box production (2018-2022)</p>	Fair representativeness as the emissions have been calculated with average emission factors of the products (except for the grip socks, where emission factor is based on primary data).	<p>Emissions of grip sock production (0.193 kgCO<sub>2</sub>e/pair of socks) was estimated based on the product's LCA study conducted for CareCare during 2018-2019 (Elinkaariklinikka: IGS-pitosukan (10 kpl) tuotanto ja pakkaaminen), from which the emissions related to the product transportation between CareCare and the factory were reduced to avoid double counting.</p> <p>Plastic bag and cardboard box weights were obtained from the previous LCA study made for CareCare Oy (see above).</p> <p>Transportation emissions of the purchased products, if any, are assumed to be included in the emission report of Posti (logistics company used by CareCare). However, transportation of the grip socks from the factory is estimated separately and included in the category "other upstream transportation".</p>

# Data – Scope 3, *continued*

Category	Included and excluded totalities and main assumptions	Sources of emission factors	Representativeness of the results	Methodology and other notes
Purchased services	<p>Following services were included in the calculation (VAT 0 %):</p> <p><i>Netvisor, 1 642 €</i>  <i>Accounting, 4 207 €</i>  <i>Internet, 182 €</i>  <i>Advertising services, 14 321 €</i>  <i>Photocopies, 948 €</i>  <i>Consulting fees (patents), 12 741 €</i></p>	DEFRA (2011). Inflation corrected for the year 2022.	Fair representativeness as the emissions have been calculated with average emission factors of the services.	Leasing of multifunction printer is included in scope 2 – electricity consumption.
Waste generated in the operations	<p>Waste generated in the operations is ca. 10 litres per week. Applied waste handling methodology is incineration (waste is collected as mixed waste).</p> <p>Emission factor for waste handling is 47 kgCO<sub>2</sub>e/tonne, including waste transportation.</p>	<p>Statistics Finland. Fuel classification 2022.</p> <p>Dahlbo et al. 2011. HSY:n alueella tuotettujen, käsiteltyjen ja hyödynnettyjen jätelajien khk-päästökertoimet - Laskelmien taustatietoa.</p>	Good representativeness.	Assumed conversion factor for 1 kg of mixed waste is 40 litres (HSY. Jättemäärien laskenta yrityksessä ja yhteisössä)
Business travel	<p>Two trips to trade fairs (Helsinki and Oulu): 1948 km driven by diesel passenger car.</p> <p>One product presentation trip to Sweden, 2 people. Travelling by train and ship. Two hotel nights in Stockholm.</p>	<p>Statistics Finland. Fuel classification 2022.</p> <p>VTT Lipasto (2016).</p> <p>VR. Carbon footprint calculator.</p> <p>Storstockholms Lokaltrafik.</p> <p>Filimonau, V., et al., Reviewing the carbon footprint analysis of hotels: Life Cycle Energy Analysis (LCEA) as a holistic method for carbon impact appraisal of tourist accommodation.</p>	Good representativeness.	For the trips made with passenger car, average diesel consumption of the used vehicle (7 litres/100 km) was used in the calculations. For the public transportation, emission were calculated based on the average emissions per passenger kilometre.

# Data – Scope 3, *continued*

Category	Included and excluded totalities and main assumptions	Sources of emission factors	Representativeness of the results	Methodology and other notes
Other upstream transportation	Total diesel consumption of the passenger car 88 litres, including pick-up of the grip socks from the factory and their transportation to Posti.	Statistics Finland. Fuel classification 2022 & 2023.	Good representativeness.	Diesel consumption estimated based on the driven kilometres stated in the travel invoices.
Downstream transportation	Emissions related to the products' transportation to the end customers was obtained from the emission report of Posti. Total emissions 0.296 tCO <sub>2</sub> e.	Posti emission report.	Good representativeness.	Includes well-to-wheel emissions.
End-of-life treatment of sold products	<p>End of life emissions include end of life treatment of grip socks (incineration) and packaging material (incineration assumed for the plastic bags and recycling process for the cardboard boxes).</p> <p>Total amount of sold pairs of grip socks: 22 583</p> <p>Total amount of plastic bags used for packaging: 1661 (estimated based on the amount of sold products for the retail stores)</p> <p>Total amount of cardboard boxes for packaging: 1926 (estimated based on the amount of sold products assuming 10 pairs per box)</p>	<p>Statistics Finland. Fuel classification 2022 &amp; 2023.</p> <p>Dahlbo et al. 2011. HSY:n alueella tuotettujen, käsiteltyjen ja hyödynnettyjen jätelajien khk-päästökertoimet - Laskelmien taustatietoa.</p>	<p>Fair representativeness, as the calculation includes uncertainties related to the waste handling methodologies.</p>	<p>Includes waste transportation.</p> <p>Weight of the sold products obtained from the product's LCA study conducted for CareCare during 2018-2019 (Report 2018, updated 2019). Elinkaariklinikka: IGS-pitosukan (10 kpl) tuotanto ja pakkaaminen.)</p>

