CTOUCH Greenhouse Gas Emission Report 2022

This report presents CTOUCH's 2022 GHG greenhouse gas emission inventory. This GHG inventory has been calculated and reported in accordance with the GHG-protocol Corporate Accounting and Reporting Standard. All of the most recent emission factors available at the date of reporting have been taken from CO2 Emissiefactoren, 2023. (CO2 Emissiefactoren, 2023) (WBCSD, 2004)

Introduction

The figure below shows the three scopes in which GHG-emissions are reported. With this report, we hope to align our GHG-emission accounting with internationally relevant accounting schemes

In addition to reporting the impacts of our products through specific and detailed Life Cycle Assessment (LCA) reports, we also want to map and report our GHG emissions at the corporate level to provide full transparency. By basing ourselves on the GHG-protocol Corporate Accounting and Reporting Standard, we are seeking alignment with internationally recognized methods for reporting GHG emissions. It also enables us to monitor progress per scope in the coming years, and to set sharper goals for GHG emission reduction per scope. Furthermore, we aim to join the the Science Based Targets initiative, for which it is essential to report emissions in different scopes and set concrete targets per scope. (WBCSD, 2004)

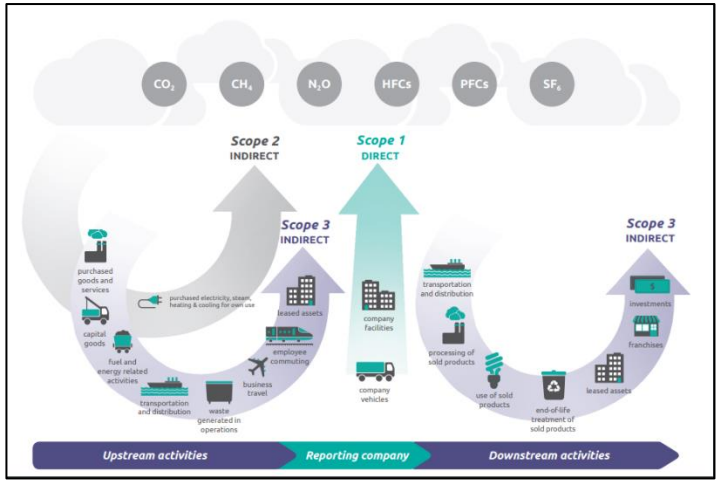

Figure 1 Scope 1, 2 and 3 of the GHG-protocol Corporate Accounting and Reporting Standard.

Scope 1 & 2

In table 1 all of our emissions in scope 1 and 2 are calculated using the emission factors from https://www.co2emissiefactoren.nl/. We will discuss our emissions in each of the sections that the table reports separately in the following paragraphs. (CO2 Emissiefactoren, 2023)

Direct combustion and energy generation
As determined from energy bill from our office in 2022, we have consumed 66.873kWh of solar energy. This number is based on the amount of m2 that we rent in our office building. The solar panels collected a total of 602.480 kWh in 2022. Our office space represents 11.09% of the total amount of m2 available, as such. 11.09% of the total amount of collected solar energy is attributable to CTOUCH, which is the 66.873kWh reported in the table below. (Goevaers, 2022a) (Goevaers, 2022b)

Additionally, the entire office building in which we rent a unit heats and cools using existing heat pumps. During peaks of cold, "supplemental" heating is provided through a nearby biomass plant. The heat from the biomass plant was 3.780 GJ for the entire building. Based on rented m2 of office space, which is 11.09% of the total available office building, CTOUCH's share is 420GJ. (Goevaers, 2022a) (Goevaers, 2022b)

Fuels vehicles and ships
At CTOUCH we own three vans used by service mechanics and other personal to travel within the Netherlands. All three vans run on Diesel fuel, and for each vehicle the odometer reading as well as the amount of consumed Diesel (in Litres) is accurately logged in internal documents. In 2022, a total of 7.211L of Diesel was consumed to fuel these vans. (CTOUCH, 2022)

Purchased energy
In 2022, we purchased 284.796 kWh of grey electricity according to our energy bill (Goevaers, 2022a) (Goevaers, 2022b). This purchased electricity can is made up of 2 components:

- Electricity user specific: Purely the electricity that we use from the outlets in our rental office.
- Electricity building specific: Electricity for all common areas, building-specific installations such as heat pumps, cooling, lighting etc. throughout the building.

The purchased electricity usage attributable to CTOUCH is 96.012 kWh (electricity user specific) based on the meters in our office plus 255.957 kWh as our share for the electricity building specific electricity. By adding them up we arrive at a total of 284.796 kWh of purchased electricity.

Table 1 Scope 1 and 2 emissions of CTOUCH Europe B.V.

Emission Source	Type	CO_{2e} factor	Unit	Consumption	CO2e emission	Scope
Direct combustion and power generation						
Gas	Natural gas	1,782	Nm3	-	-	S1
Green gas / Biogas	Green gas (RWZI-sludge)	0	Nm3	-	-	S1
Oil	Crude oil	3,13	kg	-	-	S1
Coal	Coal	2,308	kg	-	-	S1
Wood biofuels	Shreds (NL)	0,009	kg ds	-	-	S1
Green electricity	Solar power	0	kWh	66.873	-	S1
Fuels vehicles and ships						
Gasoline	Gasoline (E10 blend)	2,176	litre	-	-	S1
Diesel	Diesel (B7 blend)	2,468	litre	7.211	17.796	S1
Other fuels	Hydrogen grey	0	kg	-	-	S1
Other fuels	LNG	2,945	kg	-	-	S1
Grey electricity	Electricity (unknown)	0,29	kWh	-		S2
Green electricity	Wind power	0	kWh	-	-	S2
Purchased energy						

Green electricity	Wind power	0	kWh	-	-	S2
Grey electricity	Grey electricity	0,396	kWh	284.796	112.779	S2
Grey electricity	Supplier-specific		kWh	-	-	S2
Heat grid	Average heat grids	21,93	GJ	420	9.211	S2
Residual heat	Residual heat without co-firing	7,9	GJ	-	-	S2
Refrigerants and other						
Refrigerants	R125	3170	kg	-	-	S1
Refrigerants	R134a	1300	kg	-	-	S1
Refrigerants	R744			-	-	S1
Methane	Methane	28	kg	-	-	S1
Nitrous oxide	Nitrous oxide	265	kg	-	-	S1

Result per year	**2022**
Total CO_{2e}-emission (kg)	139.785
CO_{2e}-emission (tkon)	140
CO_{2e}-emission - Scope 1 (kg)	17.796
CO_{2e}-emission - Scope 2 (kg)	121.990

Total scope 1 and 2 emissions

Our total GHG-emissions in scope 1 add up to 17.796 kg CO2e, while our total GHG-emissions in scope 2 add up to 121.990 kg CO2e, resulting in a total scope 1 and 2 GHG-emission of 139.785 kg CO2e

Scope 3

Regarding the calculation of scope 3 emissions, we rely heavily on the information provided by the LCA's that we have conducted for each of our products since 2019. An overview of the carbon footprint associated with our the sales of our products in 2022 can be found in table 2. In these LCA's, emissions are accounted for during the production phase, transport phase, use phase and End-of-Life phase of our products. As

such, the CO2-footprints reported in these LCA reports already includes a lot of upstream and downstream impacts that are to be reported under scope 3 in accordance with the GHG-protocol Accounting and Reporting Standard, such as impacts from purchased goods and services, transport and distribution or waste generated in operations (upstream), but also processing, use and EoL treatment of sold products (downstream). (Dispersed, 2022) (Dispersed, 2023)

Hence, by multiplying the carbon footprint per product with the sales of these products in 2022, we can make quite a precise estimation of our total scope 3 emissions since a lot of these impacts are already included in the product footprints. The total carbon footprint of our products sold in 2022 is displayed in table 2, per display size, and approaches our total scope 3 GHG-emissions in great detail.

Table 2 The total carbon footprint of all screens sold in 2022, shown by display size, used for calculating scope 3 emissions

Display Size	CO2 impact (tonnes CO2eq.)
55"	953,622
65"	3013,178
75"	6349,758
86"	11240,567
Total	**21557,125**

In addition to the above, the impact of business travel and employee commuting are two other categories that have to be taken into account when calculating scope 3 emissions. Since these elements are not included in the LCA's performed for our products, we calculated the GHG-emissions from these categories separately.

Business Travel

With regards to business travel, the distance-based method was used to calculate emissions from business travel. This involves determining the distance and mode of business trips and applying the appropriate emission factor. At CTOUCH, all flights that CTOUCH personal have taken in 2022 have been registered. In total, CTOUCH personal have flown an accumulate distance of 44.935km spread over 69 flights. Of these 69 flights, 29 were return flights and 11 were single flights. Fifty four of these flights were over a (single-flight) distance shorter than 700km, and the other 15 flights were over distances in the range of 700 – 2500 km. According to CO2-emissiefactoren, a different emission factor has to be used for flights over these different distances, which has been taken into account in our calculation. In total, the business travel of CTOUCH employees has contributed 8045kg CO2 emissions to the total scope 3 GHG inventory. (CO2 Emissiefactoren, 2023)

Employee commuting

GHG-impact from employee commuting has also been taken into account. Detailed data logs are kept regarding employee commuting, documented in internal files. The table below shows an overview of the total amount of different types of fuels consumed by cars leased by CTOUCH's personnel. The emissions associated with each fuel type are calculated using the emission factors from CO2 Emissiefactoren, 2023, which results in a total contribution of employee commuting of 21.262kg CO2. (CO2 Emissiefactoren, 2023) (CTOUCH, 2022) (CTOUCH, 2022)

Table 3 Overview of fuels consumed by cars leased by CTOUCH in 2022.

Fuel	**Amount**	**Unit**	**CO2eq**
Fast charging	51,96	kWh	0,00
Charging	5384,72	kWh	0,00
Euro95	5092,69	L	11082
Diesel	4070,05	L	10045
Premium Diesel	55,03	L	136
Sum			**21.262**

Total Emissions

Total scope 1, 2 and 3 emissions for CTOUCH Europe B.V. add up to 21.726.221kg CO2e.
Scope 1 emissions add up to 17.799kg CO2e or 0.08% of total emissions. Scope 2 adds up to 121.990kg CO2e and represents 0.52% of total emissions. Scope 3 represents the majority of CTOUCH's emissions, with a contribution of 21.586.432kg CO2e and a share of 99.40% of total emissions. Figure 2 below provides an overview of our total emissions in scope 1, 2 and 33, and exemplifies the grave differences.

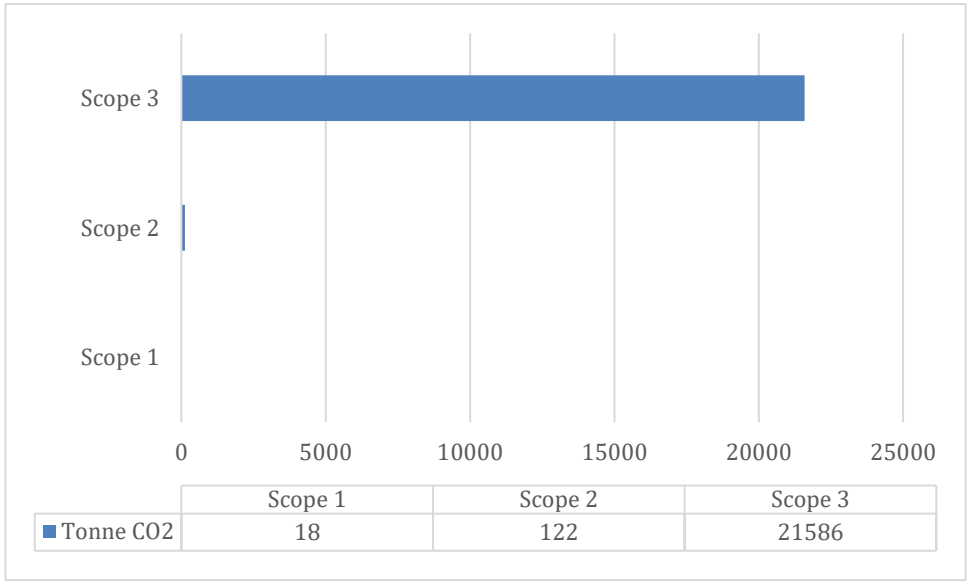

Figure 2 Total emissions in scopes 1, 2 and 3 in tonne CO2.

Bibliography

CO2 Emissiefactoren. (2023). *Lijst emissiefactoren*. Opgehaald van CO2 Emissiefactoren: https://www.co2emissiefactoren.nl/

CTOUCH. (2022). Brandstofkosten 2022 CTE.

CTOUCH. (2022). Reiskosten 2022 CTE.

CTOUCH. (2022). Verbruik S&T 2022.

Dispersed. (2022). *Final LCA Canvas & Riva.* Opgehaald van https://saharainteractive.sharepoint.com/:b:/r/sites/Projecten905/Gedeelde%20documenten/General/Sustainability/EcoVadis/Ondersteunende%20documenten/2.%20Duurzaamheidsverslagen/2.%20LCA%20rapporten/Final_LCA_Canvas_Riva_Feb_23.pdf?csf=1&web=1&e=LSDFC7

Dispersed. (2023). *Final LCA CTOUCH Neo.* Opgehaald van https://saharainteractive.sharepoint.com/:b:/r/sites/Projecten905/Gedeelde%20documenten/General/Sustainability/EcoVadis/Ondersteunende%20documenten/2.%20Duurzaamheidsverslagen/2.%20LCA%20rapporten/Final_LCA_Neo_28112022_CTOUCH_Dispersed.pdf?csf=1&web=1&e=

Goevaers. (2022a). *CTOUCH Afrekening gebouw TQ 2022, bijlage 1.*

Goevaers. (2022b). *CTOUCH Afrekening gebouw TQ 2022, bijlage 2.*

WBCSD. (2004). *Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.* WBCSD.