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Climate Report 2022

The Swedish Internet Foundation

The content of the climate report 2022

1.1 Executive summary (1/2)

Background, methodology and scope

The Swedish Internet Foundation is an independent, private foundation that works for the positive development of the internet. The organisation is responsible for the Swedish top-level domain .se and the operation of the top-level domain .nu. The Swedish Internet Foundation has a wholly owned subsidiary MetaSolutions, which is a software company developing cloud-based solutions that support organisations to publish and manage linked and open data.

This climate report includes The Swedish Internet Foundation's and MetaSolutions' climate data, presented in tonnes of carbon dioxide equivalents (tCO2e), for the reporting year 2022, and the progress over time.

The report was prepared in accordance with the CENTR[1] methodology agreed in CENTR Sustainability Core Team, and the calculation of greenhouse gas (GHG) emissions was primarily performed in accordance with the Greenhouse Gas Protocol (GHGP) Corporate Standard and Corporate Value Chain (Scope 3) Standard[2].

[1] Council of European National Top Level Domain Registries.
[2] GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.

1.2 Executive summary (2/2)

Key results

Indirect GHG emissions occurring upstream and downstream of The Swedish Internet Foundation's and MetaSolutions' value chain (**Scope 3**) represent the **largest part** of GHG emissions for the reporting year 2022. These emissions represent 95 % of the total GHG emissions. Key findings of the data:

- The **total** GHG emissions for the reporting year according to the CENTR methodology and the GHG Protocol were 167 tCO2e and 195 tCO2e, respectively[1].
- The GHG emissions **per FTE**[2] according to the CENTR methodology and the GHG Protocol were 1,4 tCO2e and 1,7 tCO2e, respectively[1].
- The GHG emissions **per active domain** (.se and .nu) according to the CENTR methodology and the GHG Protocol were 96 gCO2e and 113 gCO2e, respectively[1].

The GHG **emissions increased** in 2022 compared to 2021, primarily due to:

- Increase in business travels during 2022 compared to 2021, partly due to no COVID-19 restrictions.
- Addition of Scope 3 emission sources, e.g., electronic equipment (light signs etc), food, beverage and furniture.
- Updated methodology for estimating energy consumption (in kWh) from data storage and data traffic for cloud services and secondary name servers, which is the input data calculating GHG emissions from data centres.

[1] The intensity figure is higher when including all GHG emissions according to the GHG Protocol due to the inclusion of more emission sources, such as additional sources in purchased goods and services (3.1), fuel- and energy-related activities (3.3) and hotel nights (3.6). For more information about the additional GHG sources included, see page 11 and page 22.
[2] Full-time equivalent.

Introduction

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2.1 About this report

This climate report includes The Swedish Internet Foundation's and MetaSolutions' climate data for the reporting year 2022.

The climate report was prepared in accordance with the Council of European National Top-Level Registries (CENTR) methodology and the Greenhouse Gas Protocol (GHGP) Corporate Standard and Corporate Value Chain (Scope 3) Standard. The data presented in this report refers to the underlying activity data used to calculate GHG emissions in tonnes of CO2e (tCO2e).

This is the ninth climate report released by The Swedish Internet Foundation. Between the years 2008 - 2019, The Swedish Internet Foundation published climate reports every second year, and since the year 2020, releases the climate report annually.

This climate report 2022 was prepared with support from Ethos.

Council of European National Top-Level Registries (CENTR) is the association of European country code top-level domain (ccTLD) registries.

The Swedish Internet Foundation is involved in CENTR where national top-level domains collaborate on on technical, legal, security and sustainability issues. The organisation has a European focus, but several national top-level domains outside Europe are also members.

2.2 Background

About The Swedish Internet Foundation

The Swedish Internet Foundation is an independent, private foundation that works for the positive development of the internet. The organisation is responsible for the Swedish top-level domain .se and the operation of the top-level domain .nu.

The Swedish Internet Foundation shall ensure a strong and secure infrastructure for the internet in Sweden, as well as enable people to use the internet in the best way.

In 2020, The Swedish Internet Foundation acquired majority in the subsidiary MetaSolutions, which is a software company developing cloud-based solutions that support organisations to publish and manage linked and open data.

In 2022, The Swedish Internet Foundation had 1 729 681 active domains in total[1].

At the end of the reporting year 2022, The Swedish Internet Foundation had 91,75 employees, 2 non-guaranteed hours employees and 12,4 workers (long-term consultants). MetaSolutions had 10,45 employees.

Purpose of this report

The purpose of this climate report is to disclose The Swedish Internet Foundation's, including MetaSolutions', impact on the climate for the reporting year 2022. The report also discloses its progress over time.

The result of this report may be used by The Swedish Internet Foundation, including MetaSolutions, and its stakeholder to assess its efforts with regard to climate.

Since 2015, The Swedish Internet Foundation releases an annual sustainability report which includes environmental and climate data from the climate report.

[1] 1 485 581 active .se domains, and 244 100 active .nu domains.

2.3 Methodology and scope

Methodology of this report

The underlying activity data used to calculate the greenhouse gas (GHG) emissions for the reporting year 2022 has been collected by The Swedish Internet Foundation and MetaSolutions, and reported in the data platform Atlas, developed by Ethos.

The calculation of greenhouse gas (GHG) emissions, reported in tonnes of carbon dioxide equivalents (tCO2e), has primarily been performed in accordance with the Greenhouse Gas Protocol Corporate Standard and Corporate Value Chain (Scope 3) Standard[1]. The only exception is for the calculation of GHG emissions associated with the Scope 3 category 'Capital goods' (Scope 3.2) where the CENTR methodology has been applied to facilitate benchmarking between registries.

This report applies the CENTR methodology and the Greenhouse Gas Protocol for the collection and calculation of data as well as for compiling the results.

Scope of the calculations

The Greenhouse Gas Protocol defines three different scopes of GHG emissions[2], which has been applied when calculating The Swedish Internet Foundation's and MetaSolutions' GHG emissions for the reporting year 2022. These three scopes are the following:

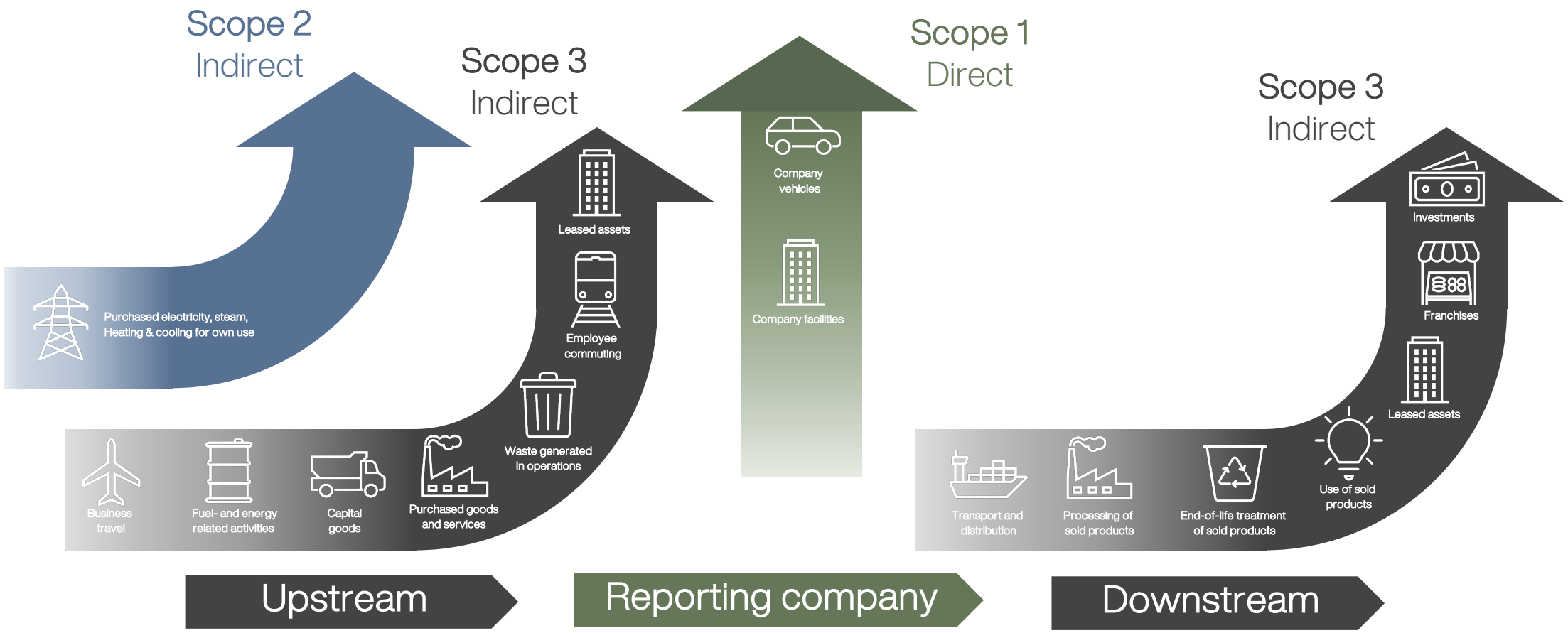
- **Scope 1**: Direct GHG emissions from owned or controlled sources.
- **Scope 2**: Indirect GHG emissions from purchased energy.
- **Scope 3**: Indirect GHG emissions occurring upstream and downstream of the value chain, not already included in Scope 1 and Scope 2.

Impact categories according to the CENTR methodology are shown in the table on page 10. These impact categories are the primary scope of this climate report.

[1] GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.
[2] Scope-based emissions according to the GHG Protocol is illustrated on page 9.

2.4 Scope-based emissions

The three scopes within the Greenhouse gas Protocol.



Source: GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.

2.5 Impact categories according to CENTR

The impact categories according to the CENTR methodology are outlined in the table to the right.

The underlying activity data used to calculate GHG emissions have been collected in accordance with CENTR methodology, with the following exceptions:

- Business travel (car): Underlying activity data has been collected in kilometres.
- Capital goods (company cars): Neither The Swedish Internet Foundation nor MetaSolutions have purchased or own any company cars.
- Refrigerants (cooling system): Data has not been collected for the reporting year 2022. However, data was collected for 2021 but zero emissions was reported. For 2022, it was assumed that neither The Swedish Internet Foundation nor MetaSolutions had any GHG emissions related to refrigerants.

Impact categories according to CENTR		Unit
Energy	Electricity office	kWh/year
	Electricity data centre	kWh/year
	Heating	kWh/year, litres fuel
Inputs	Paper	kg/year
Waste	Paper	kg/year
Mobility (commuting)	Car	km/year
	Train	passenger km/year
	Bus	passenger km/year
Business travel	Airplane travel	km/year by type of flight
	Car	litres fuel
	Train	km/year
Capital goods	Buildings (optional but required for climate compensation)	m^2 floor surface area
	Parking area (optional but required for climate compensation)	m^2 parking area
	ICT hardware	number of computers and ICT equipment
	Company cars	amount of cars converted in weight kg
Refrigerants	Cooling systems	cooling power (kW)

2.6 Additional GHG emission sources

In addition to the impact categories defined by the CENTR methodology displayed on page 10, seven additional sources of GHG emissions have been calculated and reported on in this climate report.

These emission sources are associated with Scope 3 emissions defined by the Greenhouse Gas Protocol, and represent the following:

- **Scope 3.1**[1]: Purchased goods and services.
  - Food and beverages
  - Other office equipment and electrical items (not ICT hardware)
  - Furniture
  - Other purchases and the conference 'The Internet Days'
- **Scope 3.3**[1]: Fuel- and energy-related activities not included in Scope 1 or 2, e.g., generation of energy and transmission and distribution losses.
- **Scope 3.7**[1]: Energy used by employees working from home.
- **Scope 3.6**[1]: Hotel nights.

Except for The Internet Days (in Scope 3.1), this is the first year GHG emissions data is collected for the sub-categories in Scope 3.1.
It is also the first year GHG emissions in Scope 3.3 are reported separately from Scope 2, however, these emissions constitute of a small part of the total emissions.

[1] According to the GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.

Climate data 2022

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3.1 Energy use - Offices

Activity data

The Swedish Internet Foundation has three offices which are located in Stockholm, Malmö and Linköping[1]. MetaSolutions has one office located in Stockholm.

The energy consumed in the offices has been separated into electricity, district heating, and district cooling. Only The Swedish Internet Foundation's office in Stockholm uses district cooling and none of the office locations use steam.

In total, 99 % of the energy purchased in 2022 is from renewable sources.

Climate data

The GHG emission in CO2e has been calculated according to the market-based approach, making up a total of 9,75 tCO2e.

The emission factors are primarily collected from suppliers, including Vasakronan, GodEl, E.on and Swedenergy (Energiföretagen). In cases when electricity-specific emission factors are missing, the emission factors have been collected from AIB European Residual Mixes 2022 (residual mix).

The Swedish Internet Foundation Energy - offices	**kWh**	**tCO2e**
Electricity	163 532	0,14
District heating[1]	211 162	7,27
District cooling	23 919	1,00
Total	**398 613**	**8,41**

MetaSolutions Energy - offices	**kWh**	**tCO2e**
Electricity	6 560	0,00
District heating	31 979	1,34
District cooling	0	0,00
Total	**38 539**	**1,34**

The tables show the energy consumption for each energy type and the corresponding GHG emissions according to the market-based approach (in metric tonnes CO2e) for 2022. GHG emissions according to the location-based approach are 10,92 tCO2e. For 2022, GHG emissions from production of energy is reported in Scope 3.3, see page 22. Note that the data may include rounding differences.

[1]The office in Linköping opened in June 2022. The activity data for district heating in Linköping has been estimated based on the number of square meters due to a lack of actual energy data in kWh from the landlord. The estimation represents 10 % of the total consumption (in kWh) of district heating.

3.2 Energy use – Data centres – own co-located servers

Activity data

The Swedish Internet Foundation operates own co-located servers at third party data centres. No data centres are owned by The Swedish Internet Foundation.

The data for third party suppliers 1 and 2 were collected from data centre suppliers in kilowatt-hours (kWh), which makes up 96 668 kWh. The two third party suppliers use renewable energy.

MetaSolutions did not have any own co-located servers.

Climate data

The GHG emissions from the own co-located servers are zero due to the use of renewable energy.

The Swedish Internet Foundation Own co-located servers	**kWh**	**tCO2e**
Third party supplier 1[1]	50 680	0
Third party supplier 2[1]	45 988	0
Total	**96 668**	**0**

The table shows the energy consumption from own co-located servers and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that the data may include rounding differences.

[1] Use renewable energy and an emission factor equals to zero is therefore applied.

3.3 Energy use – Data centres – cloud services and secondary name servers

Activity data

The Swedish Internet Foundation uses cloud services and secondary name servers (.se and .nu) in its operations. MetaSolutions uses cloud services.

The data for third party suppliers 3, 4 and 5 were collected from data centre suppliers in kilowatt-hours (kWh). Third party supplier 3 and 4 uses renewable energy.

The data traffic and data storage for third party supplier 6, A and B and for secondary name servers (.se and .nu) were collected from data centre suppliers in terabyte (TB). The energy consumption has been estimated to kWh based on a study by Malmodin, J. et al. (2014)[1]. The methodology for estimating energy consumption (in kWh) was updated in 2022.

The total energy consumption is estimated to 84 704 kWh.

Climate data

The GHG emission in tCO2e makes up 18,04 tonnes.

The source of emission factor is the European average from AIB European Residual Mixes 2022 (production mix).

The Swedish Internet Foundation Cloud services and secondary name servers	**TB** Data traffic and data storage	**kWh**	**tCO2e**
Third party supplier 3[2]	-	18 133	0
Third party supplier 4[2]	-	3 564	0
Third party supplier 5	-	2	0,0004
Third party supplier 6	161	57 960	16,67
Secondary name servers (.se and .nu)	0,0015	0,12	0,00004
Total	**161**	**79 659**	**16,67**

MetaSolutions Cloud services	**TB** Data traffic and data storage	**kWh**	**tCO2e**
Third party supplier A	1,92	1 924	0,18
Third party supplier B	3,13	3 125	1,18
Total	**5,05**	**5 049**	**1,36**

The tables show the energy consumption from cloud services and secondary name servers, and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that the data may include rounding differences.

[1] Source: Malmodin, J. et al. (2014) Life Cycle Assessment of ICT. Journal of industrial ecology. [Online] 18 (6), 829–845. See further information on page 32 in the appendix.
[2] Use renewable energy and an emission factor equals to zero is therefore applied.

3.4 Inputs - Paper

Activity data

The Swedish Internet Foundation reported a total of 241 kg of purchased paper in 2022.

In 2022, The Swedish Internet Foundation conducted the campaign 'Tänk Säkert', which caused a significant part of the paper purchases in 2022. These GHG emissions are reported in Scope 3.1 Purchased goods and services, see page 22 and 33.

MetaSolutions has not reported data related to paper consumption.

Climate data

The GHG emission in tCO2e makes up 0,22 tonnes.

The source of the emission factor is DEFRA 2022.

The Swedish Internet Foundation Inputs - Paper	**Kg**	**tCO2e**
Office paper	174	0,16
Paper to printer and copy machines	67	0,06
Total	**241**	**0,22**

The table shows the consumption of paper and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that the data may include rounding differences.

3.5 Waste - Paper

Activity data

For calculating the GHG emissions from paper waste, the general assumption was made that all paper purchased by The Swedish Internet Foundation during the reporting year 2022 was sent to recycling.

The Swedish Internet Foundation Waste - Paper	**Kg**	**tCO2e**
Office paper	174	0,004
Paper to printer and copy machines	67	0,001
Total	**241**	**0,005**

The table shows the waste generated from paper purchased during the reporting year and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that this data has been estimated and is based on the general assumption that all paper purchased during the reporting year was sent to recycling. Note that the data may include rounding differences.

Climate data

The GHG emission in tCO2e makes up 0,005 tonnes.

The source of the emission factor is DEFRA 2022.

3.6 Mobility – Commuting

Activity data

The Swedish Internet Foundation conducts an annual employee survey where the respondents provide information about the estimated number of days working from home during 2022 and their average transport means to commute to work.

In total, 70 employees and long-term consultants responded to the survey. Data has been extrapolated to reflect the total number of employees, workers, and non-guaranteed hours employees at The Swedish Internet Foundation.

MetaSolutions provided an estimate for the percentage of working days made from home during 2022 and the means of transport used by its employees. An estimate of the average distance to work has been applied[1].

Climate data

The GHG emission in tCO2e makes up 5,23 tonnes.

The sources of emission factors are The Swedish Environmental Protection Agency, DEFRA (2022), and Trafikanalys.

[1]Source: Svensk statistik Trafikanalys.

[2]Emission factor applied make up the average of the other transport means.

The Swedish Internet Foundation Means of transport	**Km**	**tCO2e**
Subway/train	67 995	0,42
Bus	12 180	0,76
Biking	12 999	0
Walking/running	25 150	0
Electric car	13 514	0,81
Small fossil car	1 384	0,20
Medium fossil car	3 483	0,61
Large fossil car	3 173	0,72
Boat	0	0
Other[2]	9 312	1,64
Total	**149 189**	**5,17**

MetaSolutions Means of transport	**Km**	**tCO2e**
Walking/running/biking	250	0
Average fossil car	0	0
Public transport	1 670	0,06
Total	**1 920**	**0,06**

The tables show the means of transport used by the employees to commute to work and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that the data may include rounding differences.

3.7 Business travels

Activity data

The Swedish Internet Foundation has conducted business travels by train, air and car (taxi) during the reporting year 2022.

Data for business travels by train and air were collected from the travel agency Egencia, and data for cars (taxis) was collected from Taxi Stockholm. Egencia provided GHG emissions data from travels by air, and Taxi Stockholm provided GHG emissions data from travels by taxi. GHG emissions from travels by train has been calculated.

MetaSolutions has conducted business travels by train and car (taxi) during the reporting year 2022. The activity data has been collected by the CEO, and GHG emissions have been calculated.

Climate data

The GHG emission in tCO2e makes up 54,43 tonnes.

The GHG emissions from The Swedish Internet Foundation's business travels by air and car (taxi) are collected from suppliers. The GHG emissions data for The Swedish Internet Foundation's business travels by train as well as MetaSolutions' business travels have been calculated using emission factors from DEFRA (2022).

The Swedish Internet Foundation Mode of business travels	**Passenger km or km**	**tCO2e**
Train	109 840	4,57
Air (long haul)[1]	106 150	31,07
Air (short haul)[1]	87 048	15,09
Air (domestic)[1]	14 491	3,56
Car (taxi)[2, 3]	1 261	0,11
Total	**318 790**	**54,40**

MetaSolutions Mode of business travels	**Passenger km or km**	**tCO2e**
Train	540	0,02
Car (taxi) [2]	20	0,01
Total	**560**	**0,03**

The tables show the mode of business travels and the corresponding GHG emissions (in tonnes CO2e) for 2022. Note that the data may include rounding differences.

[1] Data was collected in passenger miles and converted to passenger km. Long haul: more than 3 700 kilometres (2 300 miles). Short haul: up to 3 700 kilometres (2 300 miles). Domestic: short distance flights within our country.
[2] Include taxis running on hybrid, gas, and diesel.
[3] The activity data for the impact category was collected in km.

3.8 Capital goods – ICT hardware

Activity data

The Swedish Internet Foundation has purchased various ICT hardware during the reporting year 2022. According to the CENTR methodology, the GHG emissions from purchased ICT hardware are depreciated. Note that this is a deviation from the Greenhouse Gas Protocol[1]. The depreciation time for computers/laptops, mobile phones, screens, and servers is three years. It is five years for printers.

GHG emissions for ICT hardware purchased during the previous reporting year 2021 will be depreciated until 2023, and ICT hardware purchased during the reporting year 2022 be depreciated until 2024 and 2026.

MetaSolutions did not purchase any ICT hardware during 2021 or 2022.

Climate data

The GHG emission in tCO2e makes up 12,53 tonnes.

The sources of emission factors are DEFRA (2022) and CENTR as well as Product Environmental Reports from Apple, Samsung and Lenovo to reflect the actual purchases made during 2022.

The Swedish Internet Foundation Purchases of ICT hardware by type	**2022**	**2021**	**tCO2e[2]**
Computers/laptops	47	47	7,46
Mobile phones	38	18	1,25
Printers	3	0	2,35
Servers	8	0	1,20
Screens	2	0	0,27
Total	**98**	**65**	**12,53**

The table shows the number of ICT hardware purchased during 2022 and 2021, and the corresponding GHG emissions (in tonnes CO2e) for 2022. The GHG emissions represent both purchases made during 2021 and 2022, taking the depreciated time for each ICT hardware into consideration. Note that the data may include rounding differences.

[1] GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.
[2] GHG emissions from purchased ICT hardware 2021 represent 4,51 tCO2e. ICT hardware purchased previous to 2021 was accounted for in The Swedish Internet Foundations' climate report 2021.

3.9 Capital goods – Buildings and parking area

Activity data

The Swedish Internet Foundation and MetaSolutions leases office spaces, and The Swedish Internet Foundation also leases one parking area.

These impact categories are optional according to the CENTR methodology, but included to increase comparability with other registries reporting in accordance to the CENTR methodology. Note that calculating and reporting on GHG emissions related to the construction of leased infrastructure is not considered in the Greenhouse Gas Protocol[1]. This is thus a deviation from the Greenhouse Gas Protocol.

According to the CENTR methodology, the depreciation time of leased buildings and parking area is 40 years.

Climate data

The GHG emission in tCO2e makes up 66,53 tonnes.

The source of emission factor is CENTR.

The Swedish Internet Foundation Leased space	**m²**	**tCO2e**
Office space	3 859	62,70
Parking area	11,67	0,16
Total	**3 870**	**62,86**

MetaSolutions Leased space	**m²**	**tCO2e**
Office space	226	3,67
Parking area	0	0
Total	**226**	**3,67**

The tables show the number of square meters of leased office and parking space and the corresponding GHG emissions (in tonnes CO2e) for 2022. The depreciation time is 40 years according to the CENTR methodology. Note that the data may include rounding differences.

[1] GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.

3.10 Additional GHG emission sources

Activity data

The Swedish Internet Foundation and MetaSolutions report on additional GHG emission sources for 2022, according to the Greenhouse Gas Protocol[1].

These sources include purchased goods and services (**Scope 3.1**), fuel- and energy-related activities not included in Scope 1 or 2 (**Scope 3.3**), remote work including energy used by employees working from home (**Scope 3.7**), and hotel nights (**Scope 3.6**). Except for GHG emissions from 'The Internet Days', this is the first year the additional categories within Scope 3.1 are collected. It is also the first year Scope 3.3 is reported separately; in 2021, these emissions were included in Scope 2.

These categories are not part of the CENTR methodology but are defined within Scope 3 in the Greenhouse Gas Protocol[1]. Please see the appendix for additional information about the activity data collected.

Climate data

The GHG emission in tCO2e makes up 28,65 tonnes.

The sources of emission factors are DEFRA (2022), RISE (2022), AIB European Residual Mixes 2022 (production mix), FIRA (2022) Emission factors for Scope 3.3 have been collected from energy suppliers.

[1] GHG Protocol Corporate Standard, Corporate Value Chain (Scope 3) Standard.
[2] Refers to paper folders for the campaign "Tänk Säkert".

The Swedish Internet Foundation Additional GHG emission sources	**tCO2e**
Scope 3.1 Purchased goods and services	**23,80**
Of which food and beverages	14,74
Of which other office equipment and electrical items (not ICT hardware)	0,65
Of which furniture	4,51
Of other purchases[2]	0,77
Of the conference "The Internet Days"	3,13
Scope 3.3 Fuel- and energy-related activities not included in Scope 1 or 2, e.g., generation of energy and transmission and distribution losses	**2,81**
Scope 3.6 Hotel nights	**1,49**
Scope 3.7 Energy from working from home	**0,31**

MetaSolutions Additional GHG emission sources	**tCO2e**
Scope 3.3 Fuel- and energy-related activities not included in Scope 1 or 2, e.g., generation of energy and transmission and distribution losses	**0,19**
Scope 3.6 Hotel nights	**0,03**
Scope 3.7 Energy from working from home	**0,02**

The tables show the GHG emissions (in tonnes CO2e) for additional emission sources for 2022. The activity data is presented in the appendix, page 33-36.
Note that the data may include rounding differences.

Analysis and results

4

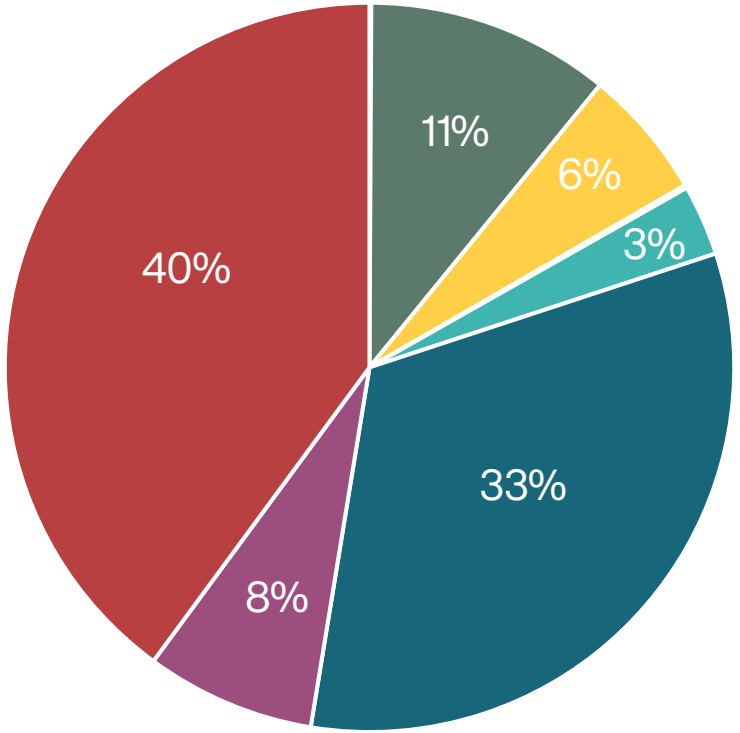
4.1 Overview of greenhouse gas emissions for 2022

According to CENTR methodology

The diagram displays the distribution of GHG emissions for The Swedish Internet Foundation and MetaSolutions according to CENTR's impact categories for the reporting year 2022.

Leased office spaces and parking area (category: capital goods – buildings and parking area) constitute the largest source of GHG emissions, representing 40 % of total emissions according to the CENTR methodology. The second largest source of GHG emissions is business travels by train, air and car, making up 33 % of the total emissions.

The impact categories for energy – electricity office, inputs – paper, and waste – paper make up less than 1 % of the total GHG emissions for 2022, and are therefore not visible in the diagram.



The GHG emission per active domain 2022: 96 gCO2e

The GHG emission per FTE[1] 2022: 1,4 tCO2e

[1]Full-time equivalent.

Note that the categories Energy – electricity offices and Inputs – paper, and Waste – paper are not seen in the diagram since the share of these GHG emissions sources is negligible.

4.2 Overview of greenhouse gas emissions for 2022

According to CENTR methodology

The table displays an overview of the GHG emissions for each impact category defined in the CENTR methodology (in tCO2e).

The table also displays the GHG emissions per active .se and .nu domain[1] (in gCO2e).

The data refers to the reporting year 2022.

Impact category according to CENTR	**Total CO2e** (tCO2e)	**CO2e per active domain** (gCO2e)
Energy – electricity office	0,1	0,01
Energy – data centres	18,0	1,04
Energy – heating (and cooling)	9,6	0,56
Inputs – paper	0,2	0,01
Waste – paper	0,0	0,00
Mobility – commuting – train, bus and car	5,2	0,30
Business travels – train, air and car	54,4	3,15
Capital goods – ICT hardware	12,5	0,72
Capital goods – buildings and parking area	66,5	3,85
Total	**166,7**	**9,64**

Note that rounding differences may occur in this table compared to the data presented in chapter 3.

[1]. Active domains in 2022: 1 485 581 active .se domains, and 244 100 active .nu domains.

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4.3 Overview of greenhouse gas emissions for 2022

According to the Greenhouse Gas Protocol

The diagram displays the distribution of GHG emissions for The Swedish Internet Foundation and MetaSolutions according to the Greenhouse Gas Protocol[1, 2] for the reporting year 2022.

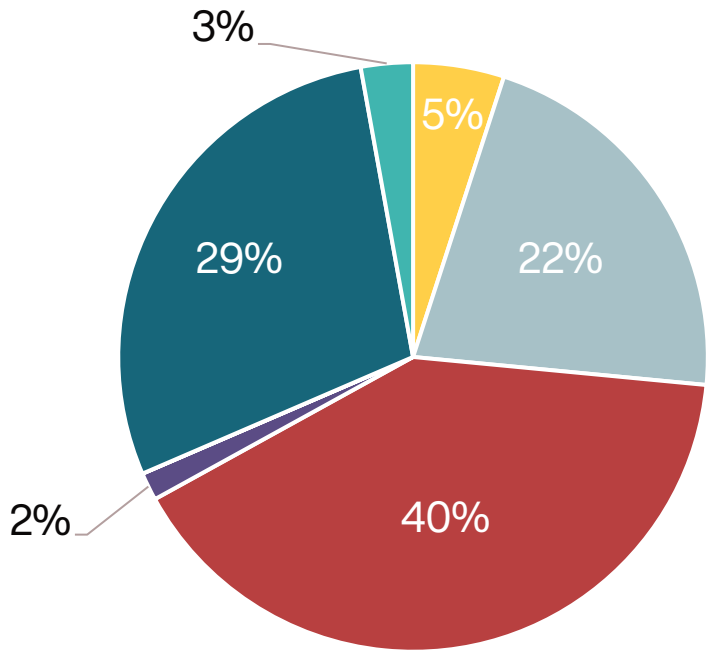
Capital goods (Scope 3.2) constitute the largest source of GHG emissions, representing 40 % of total emissions in Scope 1, 2 and 3. The second largest source of GHG emissions is business travels by train, air and car including hotel nights (Scope 3.6), making up 29 % of total emissions.

Purchased goods and services (Scope 3.1) represent 22 % of total emissions and include emissions from own co-located servers, cloud services and secondary name servers, purchased paper and the additional GHG emission sources displayed on page 22.

Waste (Scope 3.5) makes up less than 1 % of the total GHG emissions and is therefore not visible in the diagram. The Swedish Internet Foundation and MetaSolutions do not have any Scope 1 emissions during 2022.

The GHG emission per active domain 2022: 113 gCO2e

The GHG emission per FTE[3] 2022: 1,7 tCO2e



- Scope 1 (0 %)
- Scope 2 (market-based) (5 %)
- Scope 3.1 Purchased goods and services (22 %)
- Scope 3.2 Capital goods (40 %)
- Scope 3.3 Generation of energy and transmission and distribution losses (2 %)
- Scope 3.5 Waste (paper) (<1 %)
- Scope 3.6 Business travels (29 %)
- Scope 3.7 Employee commuting and remote work (3 %)

[1] The calculation of Scope 3.2 Capital goods has been calculated according to the CENTR methodology.
[2] Includes Scope 2 according to the market-based approach. Scope 2 according to the location-based approach: 10,85 tCO2e.
[3] Full-time equivalent.

4.4 Changes in emissions over time in Scope 1, 2 and 3

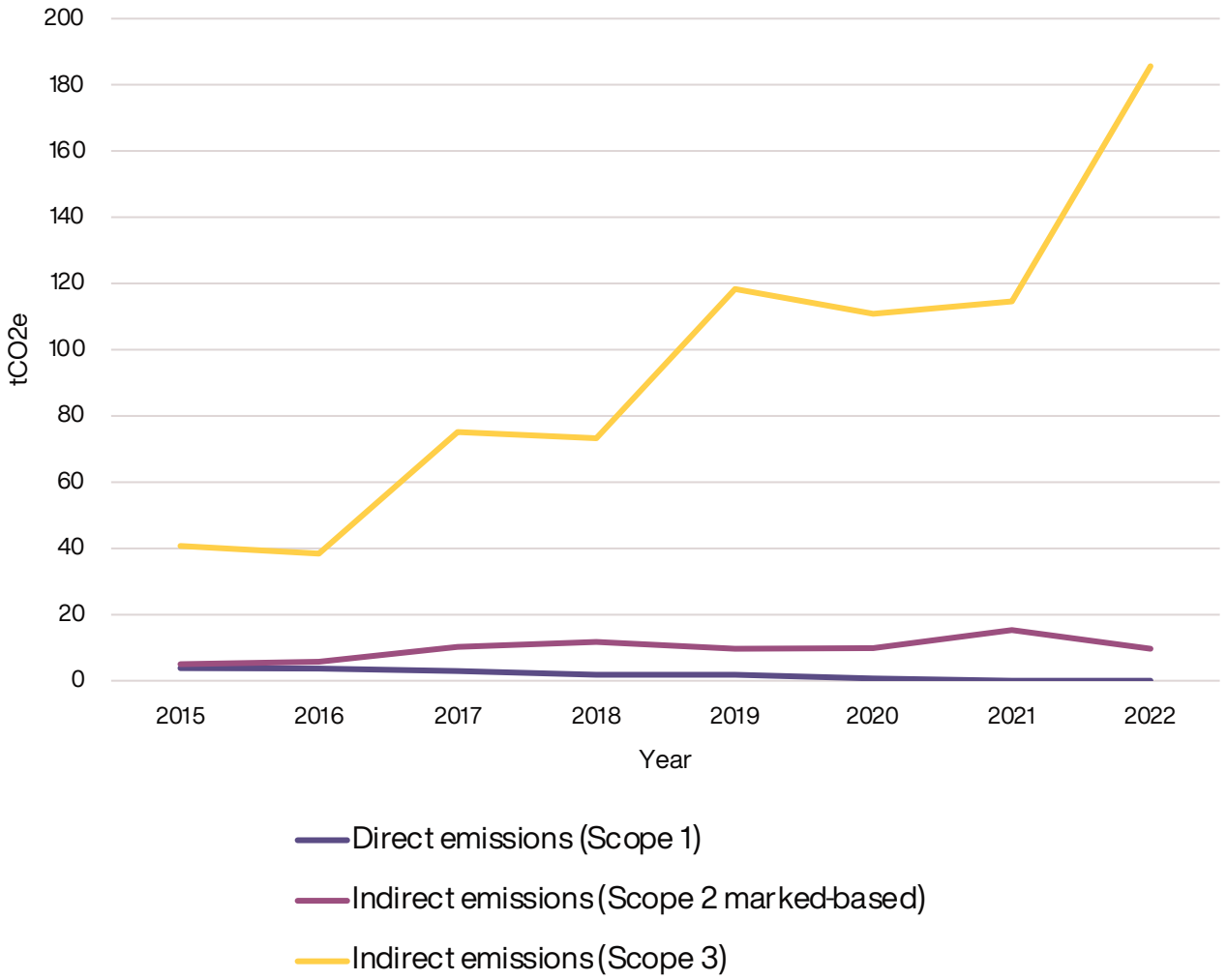
According to the Greenhouse Gas Protocol

The diagram displays The Swedish Internet Foundation's and MetaSolutions' GHG emissions in Scope 1, 2, and 3 between 2015-2022. Note that the data coverage and quality have significantly increased throughout the years, implying that direct comparisons of the GHG emissions over time are not completely accurate.

The Scope 3 emissions increased compared to 2021. This is mainly due to:

- Significant increase in business travels during 2022 compared to 2021, partly due to no COVID-19 restrictions.
- Addition of more Scope 3 emission sources in Scope 3.1 (see page 22).
- Updated methodology for estimating energy consumption (in kWh) for data storage and data traffic from cloud services and secondary name servers, impacting the GHG emissions.

Scope 2 emissions (market-based) decreased compared to 2021. This is mainly due to improved emission factors collected from energy suppliers, and decreased consumption of energy for cooling.



Summary

5

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5.1 Summary of the climate report 2022

This climate report presents the greenhouse gas (GHG) emissions (in CO2e) for The Swedish Internet Foundation and MetaSolutions for the reporting year 2022.

The report was prepared in accordance with the CENTR methodology, and GHG emissions were primarily calculated in accordance with the Greenhouse Gas Protocol Corporate Standard and Corporate Value Chain (Scope 3) Standard[1].

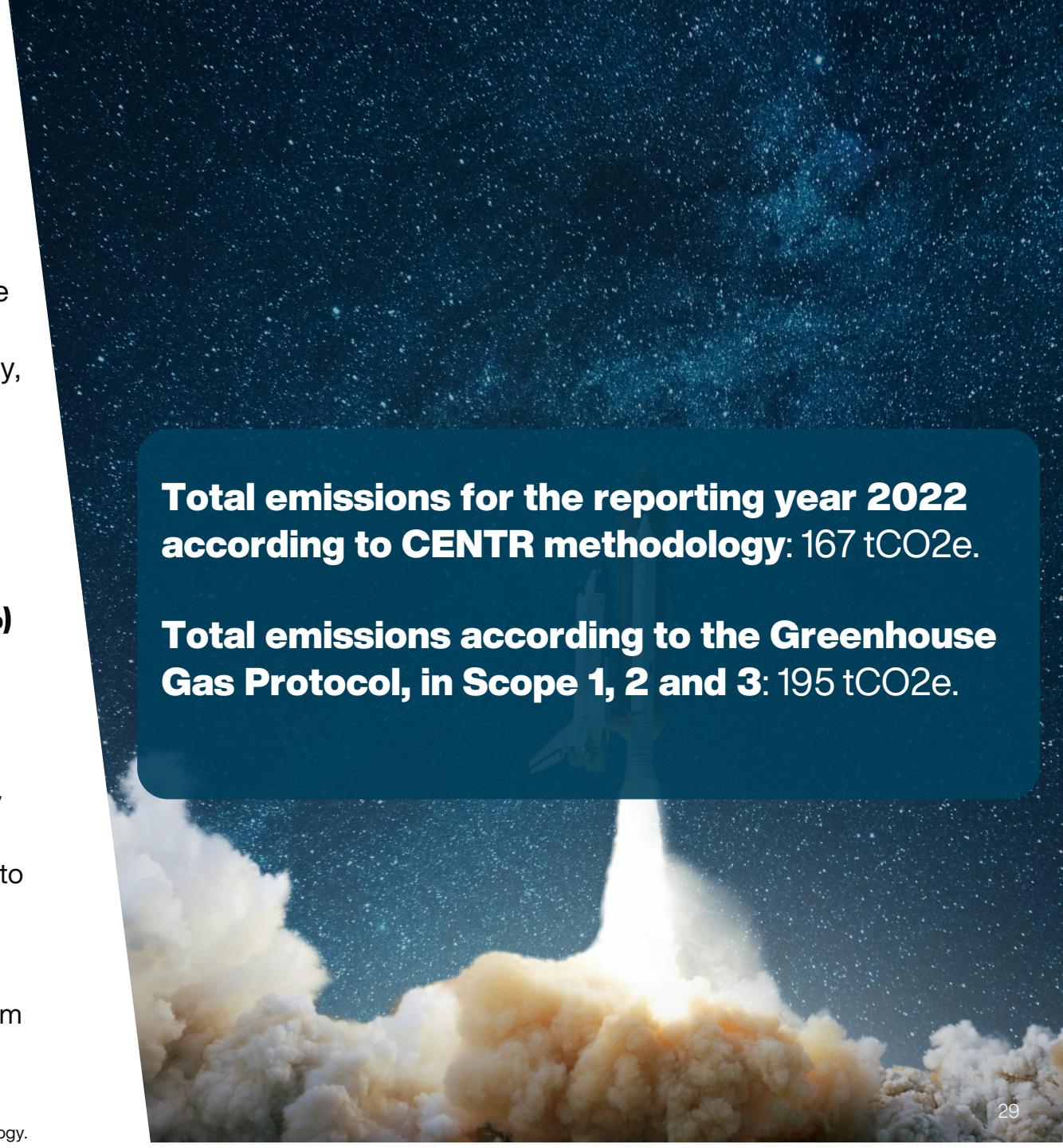
Key notes from the report:

- **Scope 2 emissions** (market-based) make up **5 % of the GHG emissions** for the reporting year 2022.
- Indirect GHG emissions in **Scope 3 make up the largest part (95 %) of the GHG emissions** for the reporting year 2022.
- The **most significant GHG emission sources** are Capital goods (**Scope 3.2**), Business travels (**Scope 3.6**) and Purchased goods and services (**Scope 3.1**).

The GHG **emissions increased** in 2022 compared to 2021, primarily due to:

- Increase in business travels during 2022 compared to 2021, partly due to no COVID-19 restrictions.
- Addition of Scope 3 emission sources, e.g., electronic equipment (light signs etc), food, beverage and furniture in Scope 3.1 (see page 22).
- Updated methodology for estimating energy consumption (in kWh) from data storage and data traffic for cloud services and secondary name servers, which is the input data calculating GHG emissions from data centres.

[1] With the exception of the calculation of Scope 3.2 Capital goods, which has been calculated according to the CENTR methodology.



Total emissions for the reporting year 2022 according to CENTR methodology: 167 tCO2e.

Total emissions according to the Greenhouse Gas Protocol, in Scope 1, 2 and 3: 195 tCO2e.

Appendix

6

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6.1 Limitations in the report

The underlying activity data for each impact category defined in CENTR as well as underlying data for additional GHG emission sources defined in the Greenhouse Gas Protocol has been collected by The Swedish Internet Foundation.

Ethos has verified the activity data to assess its completeness and its quality. Ethos did also support The Swedish Internet Foundation in calculating the GHG data, primarily based on the average data method.

However, the data presented in this report has not been subjected to third-party assurance. Therefore, Ethos cannot guarantee that no error exists in the data presented in this climate report.

6.2 Methodology for estimating energy consumption from data traffic and data storage

The data traffic and data storage for third party supplier 6 and secondary name servers (.se and .nu), as well as third party suppliers A and B were collected from data centre suppliers in terabyte (TB). The energy consumption has been estimated to kilowatt-hours (kWh) by applying the conversion factors outlined in the table below.

These conversion factors are collected from the peer reviewed study conducted by Malmodin, J. et al. (2014) Life Cycle Assessment of ICT. Journal of industrial ecology. [Online] 18 (6), 829–845.

Data	Conversion factor	Unit
Data traffic	1	kWh/GB
Data storage	0,08	kWh/GB

6.3 Activity data - Additional GHG emission sources

Scope 3.1 Purchased goods and services

The table shows the activity data used to calculate GHG emissions in Scope 3.1. This is the first year The Swedish Internet Foundation collect this data[1] and therefore, there is a higher level of uncertainty.

Purchased goods and services **The Swedish Internet Foundation**	**Unit**	**Amount**
Food and beverages[1] *Includes coffee, milk, fruit and other food purchased to the offices and to event during the report year.*	kg	5 878
Other office equipment and electrical items (not ICT hardware) Includes soundbars, cameras and other office equipment purchased during the reporting year.	number of items	8
Other office equipment and electrical items (not ICT hardware) Includes lights, lamps and small batteries to the office purchased during the reporting year.	kg	65
Furniture Includes various furniture such as office chairs and desks purchased to the offices during the reporting year.	number of items	77
Other purchases Includes paper folder to the campaign “Tänk Säkert” during the reporting year.	kg	836
The conference “The Internet Days” The GHG emission data is collected and calculated by an external party (ZeroMission).	tCO2e	3,13

[1] Except for data about The Internet Days which has been calculated for several years.
[2] Some of the food was reported in portions. An estimation was made to kg assuming that one portion is equal to 450 grams.

6.4 Activity data - Additional GHG emission sources

Scope 3.6 Hotel nights

The table shows the activity data used to calculate GHG emissions in Scope 3.6. The Swedish Internet Foundation had hotel nights in Europe, North America, and Asia. MetaSolutions had hotel nights in Europe during 2022.

Hotel nights	Unit	Amount
The Swedish Internet Foundation	number of nights	103
MetaSolutions	number of nights	2

6.5 Activity data - Additional GHG emission sources

Scope 3.7 Energy from working from home

The table shows the activity data used to calculate GHG emissions in Scope 3.7.

The data for The Swedish Internet Foundation is based on the employee survey, and an estimation of the average energy consumed per day when working from home is applied[1]. The data has been extrapolated to reflect the total number of employees, workers, and non-guaranteed hours employees at The Swedish Internet Foundation, and represent a total of 106,15 FTE.
The data for MetaSolutions is based on an estimate of the percentage of work made from home and the average energy consumption per day when working from home[1].

Energy from working from home	Unit	Amount
The Swedish Internet Foundation	kWh	38 986
MetaSolutions	kWh	2 750

[1] Source https://www.anthesisgroup.com/wp-content/uploads/2021/02/Anthesis_-Remote-Worker-Emissions-Methodology_Feb-2021.pdf

6.6 Comparison between 2021-2022

The table below demonstrate a comparison of GHG emission in tCO2e between 2021 and 2022. The total GHG emissions increased in 2022 compared to 2021, mainly due to:

- Increased business travels during 2022 (category: Business travels).
- Additional GHG emission sources within Scope 3.1 (included in: Additional categories)
- Updating of methodology for estimating energy consumption (in kWh) for data traffic and data storage related to cloud services and secondary name servers, impacting the GHG emissions (category: Energy – data centres).

Comparision 2021-2022 (tCO2e)			
Impact category	**2021**	**2022**	**Percentage change 2021-2022**
Energy use offices	15,3	9,8	-36%
Energy – data centres (own co-located servers, cloud services and secondary name servers)	5,6	18,0	222%
Inputs – paper	0,0	0,2	638%
Waste – paper	0,0	0,0	-
Mobility – commuting - train, bus and car	8,8	5,2	-40%
Business travels – train, car and air	7,8	54,4	598%
Capital goods – ICT hardware	23,9	12,5	-47%
Capital goods – buildings and parking area	64,3	66,5	3%
Total tonnes CO2e	**125,7**	**166,7**	**33%**
GHG emissions per active domain (gCO2e)	*71,9*	*96,4*	34%
GHG emisisons per FTE	*1,0*	*1,4*	40%
Additional GHG emission sources	4,1	28,6	599%
Total tonnes CO2e	**129,8**	**195,4**	**50%**
GHG emissions per active domain (gCO2e)	*74,3*	*113,0*	52%
GHG emisisons per FTE	*1,1*	*1,7*	59%

Note that the tCO2e from the category Inputs – paper contains several decimals not shown in the table. Rounding differences may occur in this table compared to the data presented in chapter chapter 3.

6.7 Sources of emission factors (1/3)

Categories		Sources of emission factors
Energy	Electricity office	• **Market based approach – electricity**: 0 kgCO2e/kWh for all offices with renewable electricity (The Swedish Internet Foundation's office in Stockholm and Malmö, and MetaSolutions office in Stockholm); CO2e emissions are collected directly from Vasakronan, representing electricity of shared property spaces for The Swedish Internet Foundation's office in Stockholm; 0,07663 kgCO2e/kWh from AIB European Production and Residual Mixes 2022 (Residual Mix) for the non-renewable electricity used in The Swedish Internet Foundation's office in Linköping. • **Location based approach – electricity**: 0,00767 kgCO2e/kWh collected from AIB European Production and Residual Mixes 2022 (Production Mix) for all office locations.
	Electricity data centre	• **Own co-located servers**: 0 kgCO2e/kWh due to the use of renewable energy. • **Cloud services and secondary name servers**: 0 kgCO2e/kWh for third party supplier 3 and 4 due to the use of renewable energy; 0,2876 kgCO2e/kWh (European average) collected from AIB European Production Mixes 2022; 0,09584 (Finland) collected from AIB European Production Mixes 2022 (location based factors); 0,37764 (Germany) collected from AIB European Production Mixes 2022 (location based factors).
	Heating and cooling	• **Market based and location based approach – district heating**: CO2e emissions collected directly from Vasakronan for The Swedish Internet Foundation's office in Stockholm; 0,000345 kgCO2e/kWh collected from E.ON Energiinfrastruktur AB for The Swedish Internet Foundation's office in Malmö; 0,09 kgCO2e/kWh collected from Swedenergy (Energiföretagen) for The Swedish Internet Foundation's office in Linköping: 0,042 kgCO2e/kWh collected from Swedenergy (Energiföretagen) for MetaSolutions. The activity data for district heating in Linköping has been extrapolated based on the number of square meters due to a lack of actual energy data in kWh from the landlord. The extrapolations represent 10 % of the total consumption (in kWh) of district heating. • **Market based and location based approach – district cooling**: CO2e emissions collected directly from Vasakronan for The Swedish Internet Foundation's office in Stockholm.
Inputs	Paper	• 0,9194 kgCO2e/kg collected from DEFRA 2022
Waste	Paper	• 0,0213 kgCO2e/kg collected from DEFRA 2022

6.8 Sources of emission factors (2/3)

Categories		Sources of emission factors
Mobility (commuting)	Car	• **Small car**: 0,1444 kgCO2e/km collected from DEFRA 2022 (applied for The Swedish Internet Foundation). • **Medium car**: 0,17588 kgCO2e/km collected from DEFRA 2022 (applied for The Swedish Internet Foundation). • **Large car**: 0,22733 kgCO2e/km collected from DEFRA 2022 (applied for The Swedish Internet Foundation). • **Electric car**: 0,06002 kgCO2e/km collected from DEFRA 2022 (average battery electric vehicle and plug-in hybrid electric vehicle, applied for The Swedish Internet Foundation) • **Average car**: 0,2166 kgCO2e/km collected from Trafikanalys (applied for MetaSolutions).
	Train	• **Subway/commute train**: 0,00620437 kgCO2e/passenger.km collected from The Swedish Environmental Protection Agency (applied for The Swedish Internet Foundation). • **Public commuting**: 0,038812 kgCO2e/km collected from Trafikanalys (applied for MetaSolutions).
	Bus	• **Bus**: 0,0626 kgCO2e/passenger.km collected from The Swedish Environmental Protection Agency (applied for The Swedish Internet Foundation).
Business travel	Air	• CO2e emissions are collected directly from the travel agency Egencia.
	Car	• CO2e emissions are collected directly from the travel agency Taxi Stockholm (applied for The Swedish Internet Foundation). • 0,05085 kgCO2e/km (well-to-tank) and 0,20826 kgCO2e/km (tank-to-wheal) collected from DEFRA 2022 (applied for MetaSolutions).
	Train	• National train: 0,00892 kgCO2e/passenger.km (well-to-tank) and 0,03549 kgCO2e/passenger.km (tank-to-wheal) collected from DEFRA 2022. • International train: 0,00116 kgCO2e/passenger.km (well-to-tank) and 0,00446 kgCO2e/passenger.km (tank-to-wheal) collected from DEFRA 2022.

6.9 Sources of emission factors (3/3)

Categories		Sources of emission factors
Capital goods	Buildings	• 650 kg CO2e per m2 collected from CENTR. Depreciation time 40 years.
	Parking area	• 13,925 kg CO2e per m2 collected from CENTR. Depreciation time 40 years.
	ICT hardware	• **Mobile phones:** 49,41 kgCO2e/piece (Iphone 14); 53,12 kgCO2e/piece (iPhone 13); 72,16 kgCO2e/piece (iPhone 12 Pro); 59,16 kgCO2e/piece (iPad Mini); 41,48 kgCO2e/piece (Samsung Galaxy S22) collected from Product Environmental Reports from respective model. Depreciation time: 3 years. • **Laptops**: 208,67 kgCO2e/piece (Apple MacBook Pro 14);148 kgCO2e/piece (Apple MacBook Pro 13); 135,24 kgCO2e/piece (Apple MacBook Air 13); 251,28 kgCO2e/piece (Apple MacBook Pro 16); 270,924 kgCO2e/piece (other laptops); 85,14; 251,28 kgCO2e/piece (iPad Pro 11); 387 kgCO2e/piece (Lenovo) collected from Products Environmental Reports from respective model. Depreciation time: 3 years. • **Screens**: 412,248 kgCO2e/piece collected from Dell. Depreciation time: 3 years. • **Servers**: 450 kgCO2e/piece collected from CENTR. Depreciation time: 3 years. • **Printers**: 2940 kgCO2e/piece collected from CENTR. Depreciation time: 5 years.
Additional sources	Purchased goods and services	• **Food and beverages**: 0,3 kgCO2e/kg (fruit), 0,5 kgCO2e/kg (coffee); 0,9 kgCO2e/kg (milk); 3,7014 kgCO2e/kg (average food and drink) collected from FIRA and DEFRA 2022. • **Other office equipment and electrical items other than ICT hardware**: 270,924 kgCO2e/piece; 5,6479 kgCO2e/kg (small office IT); 3,267 kgCO2e/kg (large office IT); 4,633 kgCO2e/kg (batteries alkaline) collected from DEFRA 2022. • **Furniture**: 72 kgCO2e/piece (office chair); 35 kgCO2e/piece (office desk); 90 kgCO2e/piece (sofa); 50,83 kgCO2e/piece (average furniture) collected from Healthy working stations. • **Other purchases**: 0,9194 kgCO2e/kg collected from DEFRA 2022. • **The conference 'The Internet Days'**: The CO2e emission data is collected and calculated by an external party (Zero Mission).
	Hotel nights	• 13,11 kgCO2e/night (Europe); 61,5 kgCO2e/night (Malaysia); 7,4 kgCO2e/night (Canada) collected from DEFRA 2022.
	Energy from working from home	• 0 kgCO2e/kWh for employees using renewable energy; 0,00767 kgCO2e/kwh AIB European Production and Residual Mixes 2022 (Production Mix, location based factors).

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