

2017 Swisscom climate report in accordance with ISO 14064

Direct and indirect climate
impact of Swisscom's
activities

(Scope 1, 2 and 3 emissions and
savings)

Climate strategy of Swisscom



swisscom

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1. Introduction

1.1. The climate strategy of Swisscom

The Paris climate agreement was ratified by Switzerland on 5 November 2017 and aims to limit the global rise in temperatures to well below 2°C above pre-industrial levels. To this end, Swisscom has set itself clear targets. Its strategy is geared towards operational efficiency (increasing energy efficiency and reducing CO₂ emissions), the development and marketing of environmentally friendly solutions, and partnerships with stakeholders active in the field of climate protection. Swisscom aims to work together with its customers to save twice as much CO₂ as it emits throughout the entire company including the supply chain by 2020. This undertaking has been summarised as the “2:1 target”.

Swisscom has verified its CO₂ reduction targets according to the approach of the Science Based Targets (SBT) initiative, which has recognised them as approved targets.

The 2030 Agenda for Sustainable Development adopted by the United Nations is the new reference framework for Swisscom. Swisscom’s climate strategy and its aim to reduce CO₂ emissions relate to the Sustainable Development Goal 13 of the 2030 Agenda: Climate Action.

This report describes Swisscom’s carbon footprint according to the ISO 14064 standard and the Greenhouse Gas Protocol (GHG), as well as the climate strategy followed by Swisscom.

1.2. Climate effectiveness of Swisscom’s activities

The reporting period is the 2017 financial year, from 1 January 2017 to 31 December 2017. Figures from previous years are provided for information purposes.

The report sets out the direct and indirect climate impact of Swisscom’s activities under scope 1, 2 and 3 for the years 2015 to 2017. It also summarises the climate impact of the savings made (directed actions).

- > **Overall emissions:** Swisscom directly (scope 1) and indirectly (scope 2 and scope 3) emitted 461,738 tonnes of carbon dioxide equivalent (CO₂ eq.) in 2017 (400,800 tonnes CO₂ eq. excluding Fastweb, with electricity compensated).
- > **Savings:** Within the same period, savings of 557,470 tonnes carbon dioxide equivalent (CO₂ eq.) were achieved thanks to directed actions (also referred to as “scope 4” in this report) in operations and by customers (of which 493,702 tonnes CO₂ eq. were attributable to customers alone).
- > **Ratio:** The ratio of savings by customers (493,702 tonnes CO₂ eq.) to Swisscom’s own emissions (400,800 tonnes CO₂ eq.) was 1.23 in 2017.

The emissions are broken down into 4,0% scope 1 emissions, 12,3% scope 2 emissions (before compensation) and 83,7% scope 3 emissions.

Swisscom’s greenhouse gas inventory was independently verified in January 2018 by Société Générale de Surveillance (SGS) in an audit according to ISO 14064. The verification focused on scope 1 and 2 emissions, but additionally covered scope 3 emissions.

Swisscom is also participating in the Carbon Disclosure Project (CDP) as part of the “Investors” and “Supply Chain” projects, for which it publishes additional information about its CO₂ emissions.

1.3. Reference systems

Swisscom's greenhouse gas inventory and its verification are based on the following standards:

International Organization for Standardization (ISO)

- > **ISO 14064-1:** Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (ISO 14064-1:2006)
- > **ISO 14064-3:** Specification with guidance for the validation and verification of greenhouse gas assertions (ISO 14064-3:2006)

World Resources Institute (WRI)/World Business Council for Sustainable Development (wbcsd)

- > **Greenhouse Gas Protocol:** GHG Protocol Corporate Accounting and Reporting Standard

The following standard provides guidance for indirect emissions under scope 2:

- > **Greenhouse Gas Protocol:** GHG Protocol Scope 2 Guidance

The following standard provides guidance for indirect emissions under scope 3:

- > **Greenhouse Gas Protocol:** GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard
- > **Greenhouse Gas Protocol:** GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (Supplement to the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard)

Until 2017, the following draft standard provided guidance for calculating greenhouse gas emissions savings using green ICT services:

- > **Greenhouse Gas Protocol:** GHG Protocol Product Life Cycle Accounting and Reporting Standard ICT Sector Guidance (Draft 9 November 2011)

As of 2018, the following standard applies for savings accumulated using green ICT services:

- > ICT Sector Guidance built on the GHG Protocol Product Life Cycle Accounting and Reporting Standard (2017)

1.4. System boundaries

In line with Swisscom's Annual Report and Sustainability Report 2017, the system boundaries for the greenhouse gas inventory are the fully consolidated companies in Switzerland (i.e. consolidated from a shareholding of 50% or higher; see Sustainability Report 2017, page 78, "Scope of the report" and Note 5.4, Group companies, page 140). Swisscom monitors the operating processes of its investments and therefore defines the operational boundaries in line with the operational control approach.

These operational boundaries include direct greenhouse gas emissions (scope 1), indirect greenhouse gas emissions generated by energy imports (electricity and district heating, scope 2) and other indirect emissions from upstream and downstream activities (scope 3 and directed actions).

Directed actions are internal efficiency measures and savings achieved by customers using services (scope 4). In the case of services, this report includes the savings in greenhouse gas emissions. These savings are achieved through services such as videoconferencing in place of business trips or efficient data centres that replace dedicated servers at customer premises.

The emissions of foreign subsidiaries such as Fastweb are recorded under scope 3, category 15 (investments).

The reporting organisations up to the end of 2017 were the following:

Swisscom Ltd:

- > Swisscom (Switzerland) Ltd and subsidiaries in Switzerland
- > Foreign subsidiary Fastweb

1.5. Link to Swisscom Sustainability Report 2017

The Swisscom corporate responsibility strategy on energy efficiency and climate protection as well as energy management, energy consumption, own CO₂ emissions and savings achieved by customers using services from the sustainable ICT portfolio are also presented in the Sustainability Report 2017 under “Energy efficiency and climate protection”. The governance regarding Corporate Responsibility, including for climate and energy management, is described in the “Corporate Responsibility – governance and implementation” section. The key figures and information in this report are in line with those set out in the Sustainability Report 2017.

1.6. Definition of scopes

Greenhouse gas emissions are broken down by scope.

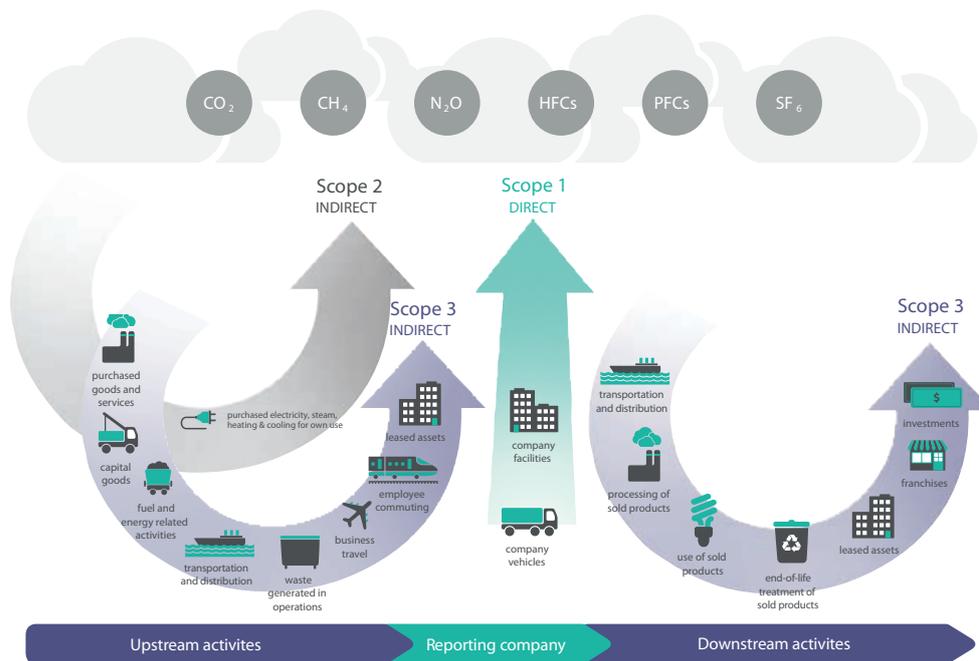


Fig. 1: Greenhouse gas emissions by scope. (Source: GHG Protocol, Corporate Value Chain (scope 3) Accounting and Reporting Standard)

Scope 1 and 2 emissions are generated by Swisscom’s activities at various locations (multi-sites).

The definitions are given in the GHG Protocol for scope 3 emissions. Relevant scope 3 greenhouse gas emissions are those from:

- > the supply chain (categories 1, 2 and 4),
- > the provision of energy (category 3),
- > waste generated in operations (category 5),
- > business travel (category 6),
- > employee commuting (category 7),
- > leased assets (in this case retail space, category 8),
- > transportation from distribution centres to Swisscom Shops or to customers (category 9),
- > the use of sold products (electricity consumption, category 11),
- > disposal of terminals (category 12),
- > investments (Fastweb: main Swisscom Group company abroad, category 15).

The following scope 3 categories are not relevant for Swisscom: processing of sold products (category 10), downstream leased assets (category 13) and franchises (category 14).

1.7. Data quality

In terms of quality, the data collection methods can be broken down into the following categories:

- > **Data quality 1:** Materials and energy flows are measured directly and the emissions calculated from them. Scope 1 emissions from refrigerants fall into this category.
- > **Data quality 2:** Another materials or energy flow is measured or recognised, and the emission levels derived from this based on assumptions. Scope 1 emissions from heating and vehicle fuel consumption, scope 2 emissions from electricity and district heating and scope 3 emissions from purchased goods (category 1), capital goods (category 2), provision of energy (category 3), upstream and downstream transportation and distribution in Switzerland (categories 4 and 9), waste generated in operations (category 5), disposal of terminals (category 12) and investments (category 15) fall into this category.
- > **Data quality 3:** Emissions are estimated, with approximate values or empirical information used. Emissions from business travel (category 6), employee commuting (category 7), leased assets (category 8) and use of sold products (category 11), along with savings achieved using services from the sustainable ICT portfolio for directed actions (scope 4), fall into this category.

1.8. Climate change carries risks and affords opportunities

Swisscom applies the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The following activities contribute to climate protection at Swisscom: analysis of the opportunities and risks climate change brings with it; creation of a programme and implementation of appropriate measures relating to the relevant issues; monitoring and reporting. The CR team is responsible for clearly coordinating and managing these activities.

Swisscom is presented with opportunities to generate revenue in the setup and development of a “green” – in other words, sustainable – portfolio of products and services. Further information on the sustainable portfolio can be found in the “Climate protection” section of the Sustainability Report. The impact of the portfolio on the climate and specifically the reduction of CO₂ emissions on the customer side thanks to the use of products from the portfolio is explained in detail in section 5. The revenue from this portfolio is not discussed separately; information of a financial nature can be found in the Swisscom Annual Report. Further detailed information on the opportunities of the portfolio can be found in the “Climate protection” section of the Sustainability Report.

Risks can be mitigated by reducing CO₂ emissions, not only directly within the company, but also indirectly with customers through a sustainable portfolio of products and services.

Opportunities and risks are presented by the following three factors:

- > **Adjustments to legislation:** Stricter requirements and standards for product efficiency and CO₂ emissions as well as new or more stringent energy taxation and legislation call for the improvement of operational processes (such as monitoring of energy consumption) or the development of new products (such as more efficient network and terminal devices).
- > **Changes to physical parameters:** Changes in average temperature and temperature extremes, the consequences of which are more frequent and increasingly severe weather events, are influencing operations and other areas.
- > **Other climate-related developments:** Stakeholder groups are adapting their behaviour and expectations to the new climate situation. In this context, the proactive positioning of Swisscom can create trust and enhance its reputation.

1.9. The climate strategy of Swisscom

The energy transition and climate change remain key issues for Swisscom and its stakeholder groups. In May 2017, the Swiss population approved the revised Energy Act, which underpins the Swiss Confederation's 2050 energy strategy, in a referendum. The revised act intends to phase out nuclear power plants and promote renewable energies. It also calls for a consistent increase in energy efficiency and the transition to renewable energies. Swisscom places a emphasis on reducing energy costs, increasing its own energy efficiency and climate protection as well as keeping its environmental footprint as low as possible.

By the end of 2020, Swisscom has set itself the goal of:

- > increasing energy efficiency by 35% from 2016 onwards.
- > achieving a ratio of savings by customers to Swisscom's own emissions of two to one: in other words, saving together with its customers twice as much CO₂ in Switzerland as it emits throughout the entire company including the supply chain.

Swisscom's energy and climate strategy to reach the above-mentioned goals relies on comprehensive energy management, efficiency and reduction measures in its own operations and in the supply chain, energy savings by customers thanks to improved products as well as the promotion of sustainable products and services grouped in an identifiable portfolio. To reduce the footprint in the company's operations, Swisscom is adopting cost-cutting measures such as fresh-air cooling of the network (Mistral), the use of low-carbon energy sources, heat recovery, the increased use of heat pumps, own electricity generation with photovoltaic systems and the offsetting of emissions from electricity with guarantees of origin (market-based approach). Footprint reduction in the supply chain is to be achieved in partnership with suppliers, for example through the CDP (Carbon Disclosure Project) Action Exchange Program.

Energy savings by customers and the promotion of sustainable products and services are described in detail in the "Directed actions" section.

Swisscom has reported its reduction targets to the Science Based Targets (SBT) initiative. The SBT initiative is a partnership between CDP, the UN Global Compact, WWF and the World Resources Institute (WRI). It classifies company reduction targets as "science-based" if they are in line with the level of decarbonisation required to keep the global temperature increase below 2°C.

Based on 2013 levels, by 2020 Swisscom is committed to reducing its:

- > scope 1 emissions by 10%
- > scope 2 emissions by 100%
- > scope 3 emissions by 18%

2. Energy management and consumption

2.1. Energy management at Swisscom

In simple terms, Swisscom Energy Management includes the following process steps:

- > Determining energy requirements over a specific period
- > Determining the energy mix, particularly the electricity mix
- > Determining and approving energy efficiency targets and measures
- > Implementing energy efficiency measures
- > Generating electricity
- > Using waste heat
- > Monitoring, accounting and reporting
- > Implementing research and development projects – e.g. relating to balancing energy – and virtual power plants (tiko)
- > Developing and marketing sustainable ICT products and services

2.2. Operational energy consumption

In 2017, energy consumption (electricity and fuels) rose slightly (548 GWh compared to 536 in 2016). This was a result of growth in the core business. In spite of that, thanks to the implemented efficiency measures and resulting savings, energy efficiency was increased by 13.9% in the year under review (source: Sustainability Report 2017). The private usage of vehicles from the Swisscom fleet was taken into consideration and subtracted from the fuel consumption.

Table 1: Energy consumption and energy mix of Swisscom Ltd in Switzerland according to system boundaries (source: Swisscom Annual Report 2017)

Energy consumption and mix [MWh]	2015	2016	2017
Electrical energy consumption	434,233	448,543	467,505
Vehicle fuel consumption petrol	4,441	5,987	4,544
Vehicle fuel consumption diesel	34,721	32,319	30,912
Vehicle fuel consumption natural gas	729	536	86
Heating energy consumption heating oil	30,376	29,531	26,630
Heating energy consumption natural gas	6,783	7,821	7,390
Heating energy consumption district heating	10,204	11,013	11,098
Total energy consumption	521,487	535,751	548,165

Chart 1: Development of Swisscom Ltd's energy mix in Switzerland in Megawatthours MWh



2.3. Energy consumption by customers

The electricity consumed by the devices of Swisscom customers was again estimated in 2017. The focus was on terminal devices that give rise to considerable electricity consumption. These include broadband routers, set-top boxes, cordless phones, handsets and devices for home networking via WLAN or Powerline.

Total energy consumption by customers amounted to 286 GWh (2016: 273 GWh) and thus accounted for an additional 53.0% (2016: 50.8%) of Swisscom's energy consumption.

Swisscom is taking steps to reduce the energy consumption of its terminal devices. For example, routers with a standby consumption level some 25% lower than that of older devices were introduced on a wider scale in 2011, while 2012 saw the launch of new set-top boxes with a low-power mode of less than 1 watt. Swisscom activated the low-power mode for set-top boxes as standard in 2013 and developed a prototype for a router with an average electricity consumption of 2 watts. In 2014, the new set-top box of the service TV 2.0 was launched on the market. It consumes 40% less electricity than previous models. In 2016, Swisscom launched a new, UHD-compatible TV box that, despite improved performance, does not consume more power than the previous TV box. In the year under review, the replacement of the old set-top and TV boxes was completed, with customers now using only the HD and UHD box for Swisscom TV 2.0. The change has been worthwhile in terms of energy efficiency. In the last five years, the number of Swisscom TV customers and TV boxes has doubled, while the total electricity consumed by customers has fallen by 10 GWh. Per customer, electricity consumption has more than halved.

2.4. Governance and responsibilities for climate and energy management

The Board of Directors of Swisscom is committed to pursuing a strategy geared towards sustainability. It addresses the relevant economic, environmental and social issues in plenary sessions. The implementation of the strategy is delegated to the CEO of Swisscom Ltd. In turn, the CEO can transfer powers and responsibilities to subordinate units and is supported in operational management by the members of the Group Executive Board. The Group Communications & Responsibility (GCR) division is responsible for the implementation of the Corporate Responsibility (CR) strategy. Group Executive Board members and the Head of Group Communications & Responsibility have been named as internal sponsors for the priorities of the CR strategy. They are responsible for progress and the achievement of targets within their priority areas. The areas of responsibility are aligned to the core tasks of the respective Group Executive Board members and the Head of Group Communications & Responsibility. They are defined as follows:

- > **Overall management:** Head of Group Communications & Responsibility
- > **Energy efficiency and climate protection:** Head of IT, Network & Infrastructure and Head of Group Business Steering (CFO) of Swisscom Ltd

3. Detailed information on scope categories

3.1. Development of scope 1 emissions

In terms of direct emissions, Swisscom reports on emissions from the consumption of fossil fuels and the loss of refrigerants. Other possible sources such as emissions from fire extinguishers are negligible, non-existent (halon) or outside Swisscom's control (SF₆).

Scope 1 emissions from heating fuels, vehicle fuels and refrigerants fell slightly year-on-year in 2017. This is due to building renovations and the use of new, more fuel-efficient vehicles (reduction of average CO₂ emissions for fleet cars) as well as to reduced refrigerants loss.

Emissions from oil consumption for stationary emergency power stations and emissions from the loss of refrigerants in cooling systems are reported separately. These systems are critical for network operation and are dealt with in a separate efficiency programme.

Table 2: Details of scope 1 emissions

Scope 1 CO ₂ eq. emissions [tonnes] from:	2015	2016	2017
Vehicle fuel consumption petrol	1,229	1,621	1,222
Vehicle fuel consumption diesel	9,305	8,671	8,292
Vehicle fuel consumption natural gas	126	95	15
Heating energy consumption heating oil	7,867	7,644	6,876
Heating oil consumption (emergency power systems)	257	255	248
Heating energy consumption natural gas	1,345	1,550	1,465
Scope 1 CO ₂ eq. emissions (from energy consumption) ¹	20,129	19,837	18,119
Scope 1 CO ₂ eq. emissions (from refrigerants)	503	220	352
Scope 1 CO₂ eq. emissions	20,633	20,057	18,471

¹ 2015: 5.5 t CO₂ eq. CH₄ und 52 t CO₂ eq. N₂O
 2016: 6 t CO₂ eq. CH₄ und 56 t CO₂ eq. N₂O
 2017: 5.2 t CO₂ eq. CH₄ und 48 t CO₂ eq. N₂O

3.2. Development of scope 2 emissions

Since 1 January 2010, Swisscom has followed a market-based approach and covers 100% of its electricity need with a mix of renewable energy sources, mostly domestic hydroelectricity with a proportion of solar and wind power. This has led to a drastic reduction in scope 2 emissions.

Efficiency measures have also helped prevent scope 2 emissions, reducing electrical consumption in operations by 26.2 GWh in 2017 (2016: 39.4 GWh). Effective methods in this regard have been the virtualisation of servers, the Mistral fresh-air cooling method, the renovation of the entire mobile network with energy-efficient infrastructure and the increased efficiency of data centres (lower PUE values).

Finally, Swisscom also generates electricity from photovoltaic installations. Total output of 1,980 kW had been installed by the end of 2017, producing an estimated 1,756 MWh in the reporting year (2016: 1,500 MWh).

In accordance with GHG Protocol Scope 2 Guidance, this report contains the hypothetical scope 2 emissions prior to compensation (location-based approach) and the effective emissions after compensation (market-based approach). The use of certified electricity reduces CO₂ emissions from electricity to the indirect emissions (provision of electricity) shown in section 3.3. Swisscom compensates the non-renewable part of its electricity mix with guarantees of origin (GoO) in two quality levels (conventional and best-quality such as “naturemade star” GoO), which meet the quality criteria for verification. A residual-mix calculation does not exist for guarantees of origin from hydropower.

Table 3: Emission factors considered for electricity (source: myclimate calculated according to ecoinvent)

In g CO ₂ eq. / kWh	Validity	Emission factor (total)	Scope 2 electricity emissions (direct)	Scope 3 electricity emissions (indirect)
Electricity				
Supplier electricity mix Switzerland (“location-based”)	from 2014	149.40	119.90	25.50
Certified electricity (“market based”)	until 2016	15.60	0	15.60
Certified electricity (“market based”)	from 2017	13.00	0	13.00

In 2015 and 2016, Swisscom applied a precisely determined emission factor for district heating of 75.94 g CO₂ / kWh. In 2017, an emission factor of 85.4 g CO₂ / kWh was applied, calculated by myclimate specifically for Swisscom over a weighted average using the district heating calculator from the company Treeze

Table 4: Details of scope 2 emissions

Scope 2 emissions are converted using the factors in Table 3.

Scope 2 CO ₂ eq. emissions [tonnes] from:	2015	2016	2017
Electricity consumption supplier electricity mix Switzerland (“location-based”)	52,065	53,780	56,054
Electricity consumption certified electricity (“market based”)	0	0	0
Heating energy consumption district heating	765	826	948
Scope 2 CO₂ eq. emissions (with certified electricity)	765	826	948

3.3. Development of scope 3 emissions

The emissions in the supply chain are considered in this report. A model for calculating supply chain emissions was drawn up with the life cycle specialists from the company treeze Ltd. Supply chain emissions significantly exceed other scope 3 emissions. Other emissions are derived from materials and energy flows or are estimated with approximate values or empirical information (category 7 and category 11).

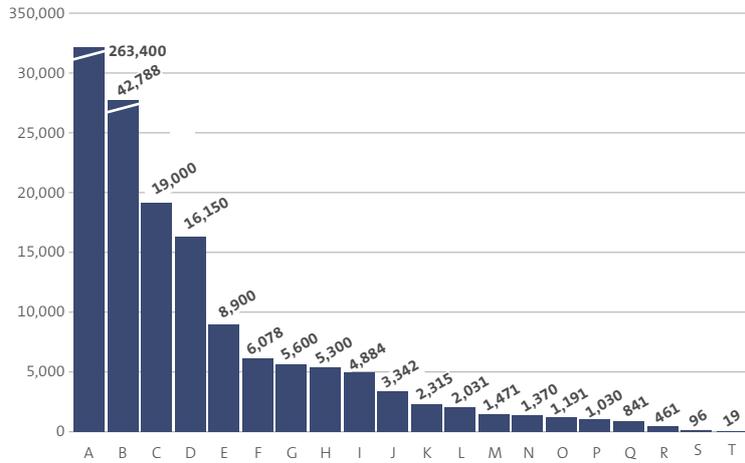
Table 5: Details of scope 3 emissions

Scope 3 CO ₂ eq. emissions [tonnes] from:	2015	2016	2017
Cat. 1 Purchased goods and services	336,800	320,900	263,400
Cat. 2 Capital goods	6,200	6,000	8,900
Cat. 3 Provision of electricity	6,774	6,997	6,078
Cat. 3 Provision of vehicle fuels (petrol + diesel) ¹	1,637	1,657	2,031
Cat. 3 Provision of heating oil	1,409	1,369	1,191
Cat. 3 Provision of natural gas	427	492	461
Cat. 4 Upstream transportation and distribution	14,700	22,100	19,000
Cat. 5 Waste generated in operations	2,124	3,970	3,342
Cat. 6 Rail travel in Switzerland	171	167	96
Cat. 6 International rail travel	33	30	19
Cat. 6 European flights	893	894	1,030
Cat. 6 Intercontinental flights	1,412	1,281	1,471
Cat. 6 Car journeys to meetings	929	1,023	841
Cat. 7 Employee commuting (public transport)	1,826	1,829	1,370
Cat. 7 Employee commuting (car)	17,445	17,478	16,150
Cat. 8 Upstream leased assets	1.3	9,600	5,300
Cat. 9 Downstream transportation & distribution	5,600	5,600	5,600
Cat. 11 Use of sold products	24,610	24,994	42,788
Cat. 12 End of life treatment of sold products	5,361	3,709	2,315
Cat. 15 Investments	9,744	9,698	4,884
Total Scope 3 CO₂ eq. emissions	438,096	439,791	386,265

¹ Vehicle fuel consumption without private use of Swisscom's fleet

Categories 10, 13 and 14 are not relevant for Swisscom. The sharp decrease in category 15 is due to the use of renewable electricity at Fastweb.

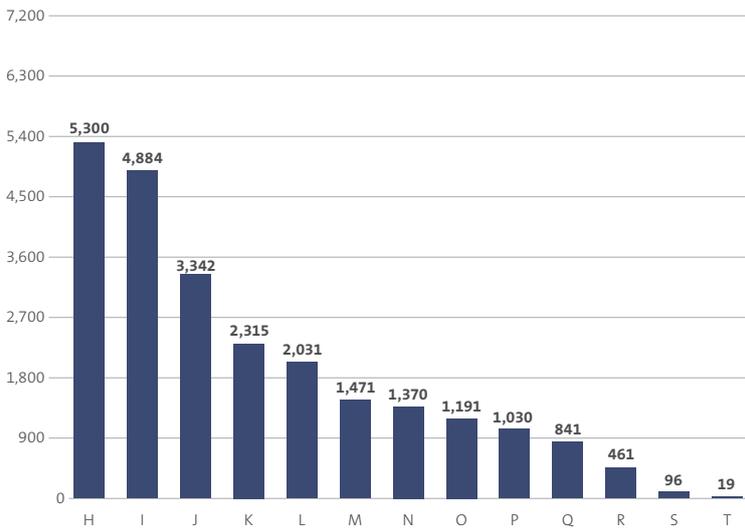
Chart 2: All scope 3 emissions by GHG category in tonnes CO₂ eq



- A = Cat. 1 Purchased goods and services
- B = Cat. 11 Consumption of sold products
- C = Cat. 4 Upstream transportation and distribution
- D = Cat. 7 Employee commuting (car)
- E = Cat. 2 Capital goods
- F = Cat. 3 Provision of electricity
- G = Cat. 9 Downstream transportation & distribution
- H = Cat. 8 Upstream leased assets
- I = Cat. 15 Investments
- J = Cat. 5 Waste generated in operations
- K = Cat. 12 End of life treatment of sold products
- L = Cat. 3 Provision of vehicle fuels (petrol + diesel)
- M = Cat. 6 Intercontinental flights
- N = Cat. 7 Employee commuting (public transport)
- O = Cat. 3 Provision of heating oil
- P = Cat. 6 European flights
- Q = Cat. 6 Car journeys to meetings
- R = Cat. 3 Provision of natural gas
- S = Cat. 6 Rail travel in Switzerland
- T = Cat. 6 International rail travel

Chart 3 provides a more detailed view of the categories with lower emissions.

Chart 3: Selected scope 3 emissions by GHG category in tonnes CO₂ eq



- H = Cat. 8 Upstream leased assets
- I = Cat. 15 Investments
- J = Cat. 5 Waste generated in operations
- K = Cat. 12 End of life treatment of sold products
- L = Cat. 3 Provision of vehicle fuels (petrol + diesel)
- M = Cat. 6 Intercontinental flights
- N = Cat. 7 Employee commuting (public transport)
- O = Cat. 3 Provision of heating oil
- P = Cat. 6 European flights
- Q = Cat. 6 Car journeys to meetings
- R = Cat. 3 Provision of natural gas
- S = Cat. 6 Rail travel in Switzerland
- T = Cat. 6 International rail travel

4. Savings (directed actions)

4.1. Method

Measures that lead to energy savings and reduced greenhouse gas emissions are classified as directed actions. These relate to savings by customers using green ICT services (scope 4) as well as measures within Swisscom that lead to a reduction in the consumption of heating and vehicle fuels and of electricity. Until 2016, reductions in greenhouse gas emissions using green ICT services were calculated using the GHG Protocol Product Life Cycle Accounting and Reporting Standard ICT Sector Guidance. From 2018, they will be calculated using the ICT Sector Guidance built on GHG Protocol.

Table 6: Measures to reduce emissions (directed actions)

Scope	Directed Actions
Scope 1 emissions	Increase efficiency, reduce the need (target 2: 1) > Fleet roadmap: spec emissions down to 95 g CO ₂ / km in 2020 > Route planning and coordinated deployment of personnel (Work Force Management) > Building renovations
Scope 2 emissions	Increase efficiency (+ 35% by 2020 from 2016) Implementation of a program to increase energy efficiency > Compensation with Guarantee of Origin and green electricity labelled naturemade star > Virtualization of servers > Cooling of networks with fresh air (Mistral) > Swap technology of mobile network and low PUE of data centers
Scope 3 cat. 1 Purchased goods	Selective measures in the supply chain Integration of suppliers in the CDP supply chain module and Action Exchange Program
Scope 3 Cat. 2 capital goods	Selective measures in the supply chain Integration of suppliers in the CDP supply chain module and Action Exchange Program
Scope 3 cat. 3 Provision of electricity	Increase efficiency (+ 35% by 2020 from 2016) Most important measure: cooling of networks with fresh air (Mistral)
Scope 3 cat. 3 Provision of vehicle fuels (petrol+diesel)	Increasing efficiency, reducing the need (-3 g CO ₂ / km per year) Most important measure: Fleet roadmap: spec. emission down to 95 g CO ₂ / km in 2020
Scope 3 cat. 3 Provision of heating oil	Increase efficiency, reduce the need (target 2: 1) Most important measure: building renovations
Scope 3 cat. 3 Provision of natural gas	Increase efficiency, reduce the need (target 2: 1) Most important measure: building renovations
Scope 3 Cat 4 Upstream Transportation and Distribution	Selective measures in the supply chain Integration of suppliers in the CDP supply chain module and Action Exchange Program
Scope 3 cat. 5 Waste generated in operations	Waste separation and recycling, local disposal
Scope 3 cat. 6 Rail travel in Switzerland	Replacement with virtual mobility (Unified Communication and Collaboration (UCC)), telepresence meetings
Scope 3 cat. 6 International rail travel	Same
Scope 3 cat. 6 European flights	Same, plus stricter approval process for flights
Scope 3 cat. 6 Intercontinental flights	Same, plus stricter approval process for flights
Scope 3 cat. 6 Car journeys to meetings	Replacement with telepresence/videoconferencing
Scope 3 cat. 7 Employee commuting (public transport)	Promotion of home office (remote working), home office guidelines
Scope 3 cat. 7 Employee commuting (car)	Promotion of home office (remote working), home office guidelines, reduction of parking spaces, promotion of public transport
Scope 3 cat. 8 Upstream leased assets (shops)	Selective measures in the supply chain
Scope 3 cat. 9 Downstream transportation and distribution (to the customers)	Selective measures in the supply chain Integration of suppliers in the CDP supply chain module
Scope 3 cat. 11 Consumption of sold products	Reduction of energy consumption of the device > Routers with a 25% lower standby compared to older devices > "1-Watt" set-top boxes > Internet Box 2 with savings parameters
Scope 3 cat. 12 Disposal of terminals	Sorting and recycling, local elimination, Program Mobile Aid (re-use)
Scope 3 cat. 15 Investments	Environmental management at subsidiary Fastweb, aims to reduce of energy consumption and use green electricity

4.2. Operational savings and efficiency improvements

There are three types of operational savings that lead to a reduction in CO₂ emissions:

- a) Savings resulting from operational measures under the terms of the target agreement on CO₂ reduction and energy efficiency improvements concluded with the Energy Agency for Industry (EnAW):

Swisscom reports annually on its carbon footprint under the terms of this target agreement, which runs to the end of 2020 and aims to increase energy efficiency. It is based on the Swiss CO₂ Act and Energy Act. Execution of the agreement is governed by the implementing directive issued by the Federal Offices for the Environment and Energy on 9 November 2011.

Swisscom's aim according to the target agreement is to increase energy efficiency by 35% by 2020 compared to 1 January 2016. The operational efficiency measures are set out in a catalogue of measures and implemented on an ongoing basis. There are 17 registered measures designed to help boost efficiency. The three most effective measures are the virtualisation of servers in data centres, the use of fresh-air cooling for networks and since 2015 the activation of savings functions in the mobile network.

- b) Savings through the use of renewable electricity and guarantees of origin:

Since 2010, Swisscom has offset the proportion of nuclear power, electricity of unknown origin and electricity from fossil fuels in its electricity mix or used for its network infrastructure and the buildings it manages by purchasing guarantees of origin. Thus, Swisscom once again used 100% renewable electricity in 2017, as certified independently.

The company purchased 20.0 GWh of "naturemade star" eco-electricity from solar energy in 2017 (20.0 GWh).

The use of certified electricity reduces CO₂ emissions from electricity to indirect emissions (see Table 4, Details of scope 2 emissions).

- c) Savings through own electricity generation:

Where economically feasible, Swisscom constructs its own photovoltaic installations to generate solar power. Total output of 1,980 kWp had been installed by the end of 2017.

4.3. Emissions by customers and the initiative to reduce them

Customers can reduce their emissions by using the sustainable portfolio made available to them by Swisscom. The sustainable portfolio offers six types of savings:

- a) Savings through services that help customers to replace some of their travel. These include conferencing services, UCC and remote access, which permit mobile working and the transmission of images, data and sound over long distances.
- b) Savings through services that enable customers to give up their own data centres and servers and outsource them to highly efficient data centres with a level of server virtualisation.
- c) Savings through services that enable customers to control devices or vehicles more intelligently via machine-to-machine connections, to monitor the levels of oil tanks, waste containers, etc. or to remotely control the heating in holiday apartments. This helps optimise logistics systems and routing to reduce the number of transport kilometres travelled by logistics fleets.
- d) Savings through dematerialisation services. This refers to customers replacing previously physical items such as CDs, DVDs or magazines with data transmitted via a broadband connection. However, dematerialisation also includes reductions in shopping trips due to online ordering and in retail space as physical shops are replaced by virtual ones.
- e) Savings through services to extend the useful life of mobile handsets. The Swisscom Mobile Aid project recycles used but still functioning handsets for further use in developing countries. This extends their useful life and gives people in developing countries access to low-cost devices.
- f) Savings through services that help to reduce paper consumption. These include electronic billing and the electronic trading platform Conextrade, on which companies can handle all their transactions electronically. Further paper savings are achieved with the Dynamic Printing service, which significantly reduces paper waste through an intelligent zone concept and features such as follow-me printing (documents are not printed until the user is at the printer).

The savings achieved through green ICT services are listed in Table 7. Swisscom developed the calculation method in collaboration with the myclimate foundation.

The savings are greater than in 2016 as they also include the savings from customers' use of tiko power for the first time, based on data from the myclimate foundation. tiko power helps to save heating energy and promote the integration of renewable energies.

Table 7: Savings using services of green ICT services

Sustainable ICT portfolio	Service group	Service	2015	2016	2017
Reducing travel	Virtual conferences	Conferencing service	35,648	37,539	34,300
		MCC/UCC	72,525	86,445	114,498
	Home office	Home office services	112,990	165,599	176,023
	Machine-to-Machine	Logistics, heating	14,817	35,724	43,625
Saving energy	Data centre services	Hosting	11,730	11,302	14,301
		Housing	2,236	953	757
Saving paper	Saving paper	e-bill, Conextrade, printing	1,524	1,308	1,282
Dematerialisation		Data carriers and retail space	109,542	108,023	107,085
Mobile Aid			1,775	1,935	1,830
Total CO₂ eq. savings portfolio			362,789	448,827	493,702

5. Summary of direct and indirect emissions and savings

Scope 1 emissions from the consumption of fossil fuels have been reduced by 12.7% compared to 1 January 2017. This success can be attributed to a favourable mix of lower-carbon energy sources. The emissions from heating fuels for heat production are climate-adjusted.

Table 8: Summary of scope 1, 2 and 3 emissions

CO ₂ eq. emissions [tonnes]	2015	2016	2017
Scope 1 (from consumption of fossil energies)	20,129	19,837	18,119
Scope 1 (from refrigerants)	503	220	352
Scope 2 (from electricity, "location-based")	52,065	53,780	56,054
Scope 2 (from district heating)	765	826	948
Total Scopes 1, 2 ("location-based")	73,462	74,663	75,473
Total Scopes 1, 2 ("market-based")	21,397	20,883	19,419
Scope 3	438,096	439,791	386,265
[Total Scopes 1, 2 ("location-based"), 3]	511,558	514,454	461,738

Table 9: Impact of directed actions

Directed Actions	2015	2016	2017
Savings by customers thanks to the sustainable ICT portfolio	362,789	448,827	493,702
Electricity offset with guarantees of origin/green electricity	58,100	61,181	63,768
Total Directed Action	420,889	510,008	557,470

The reductions in energy consumption and emissions through increased energy efficiency (4.2a) are already considered and not counted a second time here.

Table 10: Ratio of savings to emissions

Target 2:1	2015	2016	2017
Savings by customers thanks to the sustainable ICT portfolio	362,789	448,827	493,702
Emissions (without electricity and Fastweb)	419,143	449,604	400,800
Ratio savings to emissions (without electricity and Fastweb)	0.81	0.99	1.23

The ratio of savings by customers to the emissions of Swisscom (excluding Fastweb, with electricity compensated) was 1.23 in 2017.

6. Notes

6.1. Base year

The new base year for scope 1 and 2 emissions is 2012.

2012 is also the start year for the second target agreement with the Energy Agency for Industry (EnAW). Swisscom has energy data for the base year, which have been published in previous climate reports.

There have been no material changes in the reporting boundaries since 2012. Swisscom is still engaged in the same activities as in 2012, with any changes (purchase or sale of small companies, slight changes in the real estate structure) immaterial in terms of CO₂ emissions.

6.2. Recalculation of the base year emissions

In accordance with standard ISO 14064-1, significant changes in the scope of consolidation, changes of ownership or control, or the application of new or corrected emission factors shall lead to a recalculation of the base year emissions, provided these changes result in a change to the greenhouse gas emissions of more than 10% (compared to the emissions in the same year before the changes).

Scope 1: No significant change in the scope of consolidation in 2017

Scope 2: New emission factors for location-based electricity are applied for 2017 and retroactive to 2014, 2015 and 2016. A corrected emission factor for scope 2 share of location-based electricity was applied for the year 2012 and 2013 and led to a re-calculation of the scope 2 emissions in the base year (2012).

Scope 3: No base year recalculation was performed. The considered Scope 3 emissions for electricity are based on marked-based electricity and changes of scope 2 location-based electricity does not affect the scope 3 calculations.

6.3. Activities and energy consumption

Swisscom takes the following forms of consumption into account under scope 1 (direct emissions):

- > All fuel used to operate the company's own vehicles: in the case of allocated vehicles, this covers business journeys to customers and to switching centres (regional exchanges, base stations, street cabinets, etc.), while in the case of pool vehicles, it covers journeys to meetings.
- > Fuel used to heat buildings
- > Fuel for emergency power systems
- > Refilling of refrigerants

Under scope 2 (indirect emissions), Swisscom considers emissions from electricity consumption for the operation of the following systems and facilities:

- > All types of switching equipment (access (DSL, FTTH, FTTS) and core network)
- > Base stations (mobile) and transmitter stations (radio and television)
- > Cooling systems, lighting and ventilation in buildings
- > Shops (lighting and ventilation)
- > Computerised office workplaces
- > Data centres, minus the electricity consumed for hosting and housing
- > Swisscom TV (servers)

Swisscom takes emissions from district heating into account under scope 2.

Swisscom takes the following categories into account under scope 3:

- > **Category 1:** Purchased goods
- > **Category 2:** Capital goods
- > **Category 3:** Provision of energy (electricity, vehicle and heating fuels)
- > **Category 4:** Upstream transportation and distribution from places of origin to distribution centres in Switzerland
- > **Category 5:** Waste generated in operations
- > **Category 6:** Business travel (flights, rail travel and journeys to meetings in private cars)
- > **Category 7:** Employee commuting
- > **Category 8:** Leased assets (retail space including shops which are located outside Swisscom buildings – 75% of Swisscom Shops or 102 shops)
- > **Category 9:** Downstream transportation and distribution from distribution centres in Switzerland to customers (according to estimates based on the previous year)
- > **Category 11:** Use of sold products
- > **Category 12:** Disposal of terminals
- > **Category 15:** Investments, Fastweb in Italy

All other scope 3 categories according to the GHG Protocol, namely categories 10 (processing of sold products), 13 (downstream leased assets) and 14 (franchises), are not relevant for Swisscom.

6.4. Biomass, removal, CO₂ sinks

Swisscom has not used any forms of CO₂ removal or CO₂ sinks within the operational scope of the company. A telecom exchange in Twann (canton of Berne) was renovated in 2014 and is heated with wood pellets (biomass). The emissions from the few kilograms of wood are not material and were not included in the year under review. Other locations were also renovated in 2017 and are heated with wood pellets. The emissions in the reporting year are extremely low (the heating period is three months) and are not included. Biomass consumption will be recorded from 2018.

6.5. Greenhouse gas inventory according to ISO 14064

A greenhouse gas inventory according to ISO 14064 includes the emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and, since 2013, nitrogen trifluoride (NF₃). This selection is consistent with the requirements of the Kyoto Protocol. Swisscom reports on its emissions in aggregated form of CO₂ equivalents for CO₂, CH₄ and N₂O. Emissions from refrigerants are listed separately. The sources of emissions are the following:

- > **CO₂:** Combustion of fossil fuels (heating and mobility or to produce emergency power) (biogenic CO₂ from biomass combustion (wood heating) remains at a marginal level)
- > **CH₄:** Combustion of fossil fuels (heating and mobility)
- > **N₂O:** Combustion of fossil fuels (heating and mobility)
- > **HFCs:** Losses of refrigerants from cooling systems
- > **PFCs:** Losses of refrigerants or insulating agents

The following greenhouse gases are not included in the inventory:

- > **SF₆:** These emissions are beyond the control of Swisscom.
- > **Other:** The emissions from fire extinguishers are negligible or non-existent (halon).
- > **NF₃:** Emissions from the production of LCD monitors (displays) are not currently included in the inventory due to a lack of clarity regarding their detection.

6.6. Upstream and downstream levels for scope 3 analysis

The analysis of scope 3 emissions in categories 6 and 7 (travel and commuting) considers not only direct operations but also the upstream and downstream activities in connection with the manufacture of vehicles (trains and cars) and the construction of infrastructure (road and rail), which are optional under the GHG Protocol standard. Upstream and downstream activities for the other categories are not recorded due to a lack of data.

6.7. Emission factors

Emission factors for scope 1 emissions:

Since 2015, Swisscom has used the emission factors of the ecoinvent life cycle inventory database for scope 1 emissions from the consumption of fossil fuels. The corresponding emission factors are calculated for CO₂. The CO₂ to CO₂ eq. difference for these fuels is relatively small and can be ignored.

For scope 1 emissions from refrigerants, Swisscom uses the corresponding global warming potential with a horizon of 100 years (GWP100) and reports the emissions in tonnes of CO₂ eq. (IPCC 2013).

Other sources of emissions such as emissions from fire extinguishers are negligible, non-existent (halon) or outside Swisscom's control (SF₆).

Emission factors for scope 2 emissions:

The emission factors set out in Table 3 are used for scope 2 emissions from electricity, with the emissions reported in tonnes of CO₂ eq. These emission factors have been calculated by myclimate based on a study on the Swiss electricity mix (environmental review: electricity mix Switzerland 2014 from 7 December 2016) and on the basis of the data provided for the individual scopes by ecoinvent v3.1.

Swisscom sources its district heating from different heat networks. For the Scope 2 emissions from district heating, Swisscom considered in 2015 and 2016 an emission factor of 75.94 g CO₂ eq./kWh, which was directly determined by myclimate in autumn 2015; in 2017 an emission factor of 85.4 g CO₂ / kWh was applied, calculated by myclimate specifically for Swisscom over a weighted average using the remote heat calculator from the company Treeze.

Emission factors for scope 3 emissions:

For scope 3 emissions Swisscom uses the emission factors from the ecoinvent life cycle inventory database v2.2 or, wherever possible, from the new version 3.1.

Specific emission factors from the ecoinvent life cycle inventory database v3.1 were derived for the following:

- > **Emissions in the supply chain (categories 1, 2, 4 and 8):** These emission factors have been calculated for the individual scopes based on data from ecoinvent v3.1 by the company treeze Ltd. (methodology for determining greenhouse gas emissions in the ICT sector supply chain).
- > **Emissions from the provision of electricity (category 3, Table 3), the disposal of waste (category 5) and the use and disposal of terminals (categories 11 and 12):** These emission factors have been calculated for the individual scopes by myclimate based on data from ecoinvent v3.1.
- > **Business travel (category 6):** These emission factors and emissions have been calculated by the partner companies (SBB or Kuoni Business Travel).
- > **Mobility (category 7):** The emission factors correspond to those of mobitool, based on ecoinvent v2.2.
- > **Downstream transportation and distribution to customers (category 9):** These emission factors and emissions have been estimated by the logistic partner (Swiss Post).

Emission factors for savings (scope 4):

- > Savings at customer level thanks to green ICT. These emission factors have been calculated for the individual scopes by myclimate based on data from ecoinvent v3.1 and various external studies as well as Swisscom's own data.

6.8. References

6.8.1. Other reports

- > Swisscom Sustainability Report 2017: <http://report.swisscom.ch/en>
- > Swisscom Climate Reports 2015 and 2016
- > Carbon Disclosure Project (CDP): <https://www.cdproject.net/>

6.8.2. Legislation and directives

- > Swiss Federal Act of 23 December 2011 on the Reduction of CO₂ Emissions (CO₂ Act); SR 641.71; www.admin.ch/opc/en/classified-compilation/20091310/index.html
- > Swiss Federal Energy Act of 30 September 2016; SR 730.0; www.admin.ch/ch/d/sr/c730_0.html (not available in English)
- > Implementing directive: Obligations and target agreements, directive of the FOEN and FOE to the Energy Agency for Industry (EnAW) on the development of proposals to limit emissions and reduce energy consumption and on the implementation of the obligations and target agreements (available in German and French only). Berne, 9 November 2011
- > Appendix to the implementing directive: Obligations and target agreements, description of target agreement models, reporting. Berne, 9 November 2011

6.8.3. Emission factors

- > CO₂ emission factors for the Swiss greenhouse gas inventory: <http://www.bafu.admin.ch/klima/09570/index.html?lang=en>
- > ecoinvent life cycle inventory database v2.2 (2010) and v3.1: www.ecoinvent.org
- > mobitool: www.mobitool.ch. The mobitool database takes its data from the ecoinvent life cycle inventory database (v2.2).
- > Emission factor for district heating: district heating computers from the company Treeze: http://treeze.ch/fileadmin/user_upload/calculators/KBOB_Rechner/Fernwaerme.html
- > Report on the methodology used to monitor Swisscom's supply chain greenhouse gas emissions (scope 3) (6 February 2014). Swisscom internal document, not published.
- > Environmental review: electricity mix Switzerland 2011, Philippe Stolz, Rolf Frischknecht: treeze Ltd. Federal Office for the Environment (FOEN), 6 January 2015
- > Environmental review: electricity mix Switzerland 2014, Annika Messmer, Rolf Frischknecht: treeze Ltd. Federal Office for the Environment (FOEN), 7 December 2016
- > Emission factors for directed actions (savings or scope 4): "green ICT effect". Swisscom internal document, not published.

7. Contact and further questions

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8. Verification



Greenhouse Gas Verification Statement Number CCP.ISO1406401.(1500615).2017/02/18

The inventory of Greenhouse Gas emissions in the period
01/01/2017 – 31/12/2017 for
Swisscom AG

Alte Tiefenastrasse 6, CH-3050 Bern

has been verified in accordance with ISO 14064-3:2006 as
meeting the requirements of

ISO 14064-1 and WRI/WBCSD GHG Protocol – A Corporate Accounting and Reporting Standard

To represent a total amount of:

75'473 tCO₂e (Scope 1+2; gross location-based emissions for
electricity)

19'419 tCO₂e (Scope 1+2; gross market-based emissions for
electricity)

386'265 tCO₂e (Scope 3 emissions)

For the following activities

Network and transmission infrastructure for telecommunication operation,
data centre and administration of Swisscom AG in Switzerland

Lead Assessor: Daniel Aegerter
Technical Reviewer: Peter Simmonds

Authorised by:

Jonathan Hall
Business Manager
SGS United Kingdom Ltd

Verification Statement Date 6th February 2018

This Statement is not valid without the full verification scope, objectives, criteria and conclusion available
on pages 2 to 4 of this Statement.



**Schedule Accompanying Greenhouse Gas Verification Statement
Number CCP.ISO1406401.(1500615).2017/02/18**

Brief Description of Verification Process

SGS has been contracted by Swisscom AG (hereinafter referred to as "Swisscom") for the verification of direct and indirect carbon dioxide (CO₂) equivalent emissions as provided by Swisscom, Alte Tiefenastrasse 6, in their GHG Assertion in the form of a Greenhouse Gas Emissions Report covering CO₂ equivalent emissions.

Roles and responsibilities

The management of Swisscom is responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of GHG emissions information and the reported GHG emissions.

It is SGS' responsibility to express an independent GHG verification opinion on the emissions as provided in the Swisscom GHG Assertion for the period 01/01/2017 – 31/12/2017.

SGS conducted a third party verification following the requirements of ISO 14064-3:2006 of the provided CO₂ equivalent assertion in the period November 2017 to February 2018.

The assessment included a desk review and site visits at the headquarters in Worblauen (Switzerland). The verification was based on the verification scope, objectives and criteria as agreed between Swisscom and SGS on 20/06/2017.

Level of Assurance

The level of assurance agreed is that of reasonable assurance for Scope 1 and 2 emissions, and that of limited assurance for Scope 3 emissions.

Scope

Swisscom has commissioned an independent verification by SGS of reported CO₂ equivalent emissions arising from their activities, to establish conformance with the requirements of ISO 14064-1:2006 and "GHG Protocol Company Accounting and Reporting Standard" within the scope of the verification as outlined below. Data and information supporting the CO₂ equivalent assertion were historical in nature and proven by evidence.

This engagement covers verification of emissions from anthropogenic sources of greenhouse gases included within the organization's boundary and meets the requirements of ISO 14064-3:2006.

- The organizational boundary was established following the operational control approach.
- Title or description of activities: Network and transmission infrastructure for telecommunication operation, data centre and administration
- Location/boundary of the activities: Switzerland
- Physical infrastructure, activities, technologies and processes of the organization: Network and transmission infrastructure for telecommunication operation, data centre and administration.
- GHG sources, sinks and/or reservoirs included:
 - Scope 1 - stationary combustion, mobile combustion, fugitive emissions;
 - Scope 2 – purchased electricity and district heat;
 - Scope 3 – purchased goods and services, capital goods, energy upstream emissions, upstream transportation and distribution, waste generated, business travel, employee commuting, downstream transportation and

distribution, use of sold products, end of life treatment of sold products, investments.

- Types of GHGs included: CO₂, N₂O, CH₄ and HFCs
- Directed actions: efficiency improvements in operations, indirect savings due to green ICT services, use of green electricity.
- GHG information for the following period was verified: 01/01/2017 – 31/12/2017
- Intended user of the verification statement: Stakeholders such as national and international NGO's, customers, general public, regulators and rating agencies.

Objective

The purposes of this verification exercise are, by review of objective evidence, to independently review:

- Whether the CO₂ equivalent emissions are as declared by the organization's CO₂ equivalent assertion
- That the data reported are accurate, complete, consistent, transparent and free of material error or omission.

Criteria

Criteria against which the verification assessment is undertaken are the requirements of ISO 14064-1:2006 and WRI/WBCSD GHG Protocol – A Corporate Accounting and Reporting Standard.

Materiality

The materiality required of the verification was considered by SGS to be below 5% for Scope 1 and Scope 2 emissions, based on the needs of the intended user of the GHG Assertion

Conclusion

Swisscom provided the GHG assertion based on the requirements of ISO 14064-1:2006. The GHG information for the period 01/01/2017 – 31/12/2017 disclosing Scope 1 and 2 emissions of 75'473 metric tonnes of CO₂ equivalent (including gross location-based emissions for electricity) are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria. The amount of 75'473 tonnes CO₂e represents mandatory reportable emissions according to boundaries as defined by ISO 14064-1. A further 386'265 tonnes CO₂e from Scope 3 sources are verified by SGS to a limited level of assurance, consistent with the agreed verification scope, objectives and criteria.

Included in the Swisscom GHG assertion for the period 01/01/2017 to 31/12/2017, and in addition to scope 1 and 2 emissions of 75'473 metric tonnes CO₂ equivalent (including location-based emissions for electricity), is a disclosure of emissions of 19'419 tonnes CO₂ equivalent including market-based emissions for electricity. This figure includes renewable electricity used by Swisscom AG, and amounting to 100% of electricity consumption originating from renewable sources. These emissions have been verified by SGS based on WRI GHG Protocol Scope 2 Guidance.

SGS' approach is risk-based, drawing on an understanding of the risks associated with modeling GHG emission information and the controls in place to mitigate these risks. Our examination included assessment, on a sample basis, of evidence relevant to the voluntary reporting of emission information.

SGS concludes with reasonable assurance for Scope 1 and Scope 2 emissions that the presented CO₂ equivalent assertion is materially correct and is a fair representation of the CO₂ equivalent data and information, and is prepared following the requirements of ISO 14064-1.

We planned and performed our work to obtain the information, explanations and evidence that we considered necessary to provide a reasonable level of assurance that the Scope 1 and Scope 2 CO₂ equivalent emissions for the period 01/01/2017 – 31/12/2017 are fairly stated.

The scope 3 emissions are verified to a limited level of assurance. SGS concludes with limited assurance that there is no evidence to suggest that the presented CO₂ equivalent assertion is not materially correct and is not a fair representation of the CO₂ equivalent data and information.

This statement shall be interpreted with the CO₂ equivalent assertion of Swisscom as a whole.

Note: This Statement is issued, on behalf of Client, by SGS United Kingdom Ltd, Rossmore Business Park, Inward Way, Ellesmere Port, Cheshire, CH65 3EN ("SGS") under its General Conditions for GHG Validation and Verification Services. The findings recorded hereon are based upon an audit performed by SGS. A full copy of this statement and the supporting GHG Assertion may be consulted at Swisscom website (www.swisscom.ch). This Statement does not relieve Client from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Stipulations to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.