



Elisa Energy and GHG Emission Disclosure

2021

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1 IMPLEMENTATION AND RELIABILITY OF MEASUREMENTS

The GHG (greenhouse gas) emission reduction calculations of Elisa are based on *ISO 14040: 2006* principles. The independent assurance of our emission reduction analysis for 2021 was carried out by KPMG Oy Ab. This included assessment of requirements and objectives set for the calculations, and risks affecting correctness of the information. They also included reviews of reporting and data formation processes, as well as systems and data collection instructions. The objective was to ensure that policies, practices, and information systems enable sufficiently accurate and reliable calculations.

Elisa has set 2016 as the baseline year for its *Science Based Targets*, as this is when environmental reporting had fully integrated early measures, such as our use of exclusively renewable electricity.

This “*Elisa Energy and GHG Emission Disclosure*” document itself, is not assured by a third party.

1.1 Significant adjustments to previous accounting period

The *Corporate Responsibility Report* for 2021 reflects the contextual environment and its effects on among other things commuting, which is further described in section 2.1 below. Elisa continuously develops its measurements, which may imply occasional retrospective revisiting of historical figures.

For our 2021 reporting, we have updated GHG emission factors based on latest existing knowledge especially for *Scope 3* emissions (see overview in chapter 4) and developed our data gathering and analysis further. This has provided us an opportunity to retroactively revisit GHG emission figures in *Scope 3* categories 1 (Purchased Goods and Services), 2 (Capital Goods), and 3 (Fuel- and Energy-related Activities Not included in *Scope 1* or *Scope 2*). We have also kept GHG emission factors in *Scope 1* and *Scope 2* up to date, according to sources provided by third parties. Due to Elisa’s growing international footprint, we have increased the boundaries of our reporting to include new acquisitions.

Elisa has during the whole of 2021 sold energy for district heating, originating from data centre waste heat, which is now disclosed for the first time. We have already for several years reported energy efficiency data (see section 2.2), and as part of our climate neutrality continued to report our carbon compensation amounts. This is described further in section 2.3. We have chosen to compensate also selected historical GHG emissions along expanded boundaries from growing international business and inclusion of remote work.

We have in 2021 taken into use a new sustainability reporting solution to further improve transparency.

2 ELISA'S OWN CARBON FOOTPRINT

Elisa's carbon footprint, that is, the amount of carbon dioxide equivalents (CO₂e) caused by the operations, is based on most recent annual statistics and actual data obtained. The calculation methodology is based on The *Greenhouse Gas Protocol* (GHG) developed by *World Resources Institute* and *World Business Council for Sustainable Development*. The underlying principles of corporate financial calculations and reporting are used also for calculations and reporting of the GHG protocol. These are about relevance, comprehensiveness, consistency, transparency, and accuracy.

Elisa takes general principles of calculations into account in its calculations. The boundaries of the calculation are defined for the operations so that they best correspond to Elisa's operations, products, and services. The calculation is carried out in such a way that the method is transparent and verifiable by a third party. All assumptions and steps in the calculation have been clearly reported. Data collection and reporting systems and the reliability of existing controls, as well as the method of calculation and data risks related to data collection have been thoroughly evaluated by a third party.

2.1 Commuting in exceptional circumstances

The COVID-19 pandemic continued to affect us all in 2021. During the exceptional circumstances, we have to a limited degree found it necessary to visit company premises. The result from these recent commuting surveys therefore radically differs from the years before 2020, and all usual analyses are not worthwhile. *Elisa Ideal Work* related metrics, such as office space efficiency while employees are given recommendations of remote working, or amount of virtual conferencing, when there are no practical alternatives to arrange meetings between people, are curiosities during a pandemic period.

The *Commuting Survey for 2021*, conducted by the *Elisa Corporate Responsibility Team*, involved employees from Elisa's offices in several countries. The total number of respondents was 2,362, with a response rate of 45%. During the survey period (16-30 November 2021), employees in different countries where Elisa is active did on average 3.45 remote days per week (compared to 3.80 in 2020).

2.2 Reducing GHG emissions in Elisa's operations

Elisa is determined to continue realising its mission of *A Sustainable Future Through Digitalisation*. To minimise GHG emission in our day-to-day operations, we for example purchase renewable energy and continuously improve both our energy and material efficiency, as well as our ways of working.

2.2.1 GHG emission savings from Elisa Ideal Work

The *Elisa Ideal Work* model describes how Elisians are pioneers in an evolving work life. Each of us knows our own work and needs the best, and therefore can choose tools and workspaces that best support our ways of working. Our tools and spaces are increasingly in a digital environment and the workplace can be outside an office. Mobile work solutions have a clear role also in climate action.

The objective of calculating the effect of Elisa Ideal Work is to verify how mobile work solutions reduce GHG emissions in Elisa's operations. Mobile work means accessibility of people, services, and data, regardless of time and place. Due to the exceptional COVID-19 pandemic circumstances, and recommendations to work remotely whenever possible, we have for 2021 not accounted for GHG emissions reductions that arrive from our own use of remote working or virtual conferences solutions.

2.2.2 GHG emission reduction in the network

The purpose of the calculation is to monitor the GHG emission reductions resulting from continuous improvements that reduce electricity consumption in Elisa's network. Improvements come from electricity saving features or continuous modernisations or physical base station configuration

changes. As related parameters over time are defined on a more granular level, we can increase the accuracy of our calculations. The actions are multiplied by the amount of electricity saving per action, which are based on electricity consumption models for the network. This results in total savings for a period. Electricity savings for the calculated period are multiplied by a coefficient of GHG emissions.

2.2.3 Energy efficiency of mobile data

The objective is to calculate energy consumption of the mobile network per package data volume (gigabyte) transmitted through the network. The energy consumption of the radio network is divided by the amount of data transferred. The amount of mobile data transmitted in the mobile network is obtained from maintenance statistics.

2.2.4 Renewable energy as a means in climate action

The purpose is to monitor GHG emission savings resulting from purchases of carbon free and renewable energy (electricity and district cooling). GHG emission reductions are calculated by multiplying the amount of renewable energy with a market-based energy emission factor. In 2021 we purchased *certificates of origin* for renewable energy in Finland (250 GWh) and Estonia (32.5 GWh).

2.3 Carbon compensation

Elisa has worked on energy efficiency improvements for over a decade, and we use only renewable electricity in Finland and Estonia. We acquire only renewable district cooling in Finland and look into additional forms of renewable energy. We use carbon credits to offset remaining direct (*Scope 1*) and indirect (*Scope 2*) GHG emissions, as well as waste, business travels, and commuting (*Scope 3*).

For a detailed description of our carbon offsetting principles, projects, and amounts (with links to retirement evidence), please refer to our web page describing Elisa's carbon compensation portfolio.

3 ELISA'S CARBON HANDPRINT

We assist Elisa's customers in reducing their GHG emissions by providing services that help them act effectively and in an environmentally friendly manner. Virtual conferencing services by *Elisa Videra* allow our customers to reduce their amount of travel. Elisa and *Fonum* stores offer customers an efficient way to recycle and repair their devices, as well as new, environmentally friendly options when purchasing refurbished devices. With *Elisa Polystar* solutions, mobile network equipment of our operator customers will not remain switched on unnecessarily and waste electricity. *Elisa IndustrIQ* solutions allow our customers to improve energy and material efficiency in their factory operations.

3.1 Emission reductions from virtual conferencing

Elisa's chosen video conference solutions are *Cloud Connect* by Elisa Videra and *Teams* by *Microsoft*. In virtual meetings and webinars organized by external stakeholders, employees might use also other forms of solutions, both for video conferencing and remote collaboration e.g., through online

whiteboards. The strategy of Elisa Videra is to support all leading conferencing technologies, e.g., enabling interoperable gateways for customers using *Google Hangouts Meet* and enterprise *Zoom*. The largest GHG emission reduction impact from virtual meetings comes from replacing car travels.

GHG emissions for business travel by car are based on reports by leasing companies or mileage logs and expense reports. A similar approach applies to other forms of business travel, such as flights.

Flight emissions are reported directly in travel agency reports or to a small degree calculated separately from expense reports. The same flight emission factors are used for Finland and Estonia. Train travel in Finland, as well as commuting by rail in the Helsinki metropolitan region, is carbon neutral. Other commuting emissions are calculated from employee survey data gathered by Elisa, for instance for hotel lodging. The most central emission factors in use are described in the chapter below.

4 EMISSION FACTORS USED IN CALCULATIONS

Emission factors used in calculations are regularly updated by Elisa, using third party expertise. Key conversion, energy, and emission factors, including sources used, are disclosed in the below tables.

CONVERSION FACTORS

1 kWh = 0.0036 GJ

PRIMARY ENERGY FUEL AND GHG EMISSION FACTORS (Scope 1)

Source:

[Statistics Finland \(2020\)](#)

| Fuel | Density | Net calorific value | GHG emission coefficient |
|-------------|------------------------|---------------------|--------------------------|
| Gasoline | 0.745 t/m ³ | 41.9 GJ/t | 66.3 t/TJ |
| Diesel | 0.806 t/m ³ | 42.8 GJ/t | 64.7 t/TJ |
| Burning oil | 0.834 t/m ³ | 43.2 GJ/t | 70.9 t/TJ |

SECONDARY ENERGY AND GHG EMISSION FACTORS (Scope 2)

ELECTRICITY

Sources:

[Market-based factors: Finnish Energy Authority \(2020\)](#)

[Location-based factors: Statistics Finland \(2020\)](#)

[AIB \(2020\)](#)

| Country | CO ₂ e (market-based) | CO ₂ e (location-based) |
|---------------|----------------------------------|------------------------------------|
| Finland | 232.4 g/kWh | 116.0 g/kWh |
| Estonia | 546.9 g/kWh | 598.7 g/kWh |
| Spain | 286.5 g/kWh | 171.0 g/kWh |
| Great Britain | 316.0 g/kWh | 196.4 g/kWh |
| Sweden | 23.1 g/kWh | 5.7 g/kWh |
| Norway | 401.9 g/kWh | 7.6 g/kWh |

DISTRICT HEAT

Sources:

[Statistics Finland \(2020\)](#)

[GOV.UK \(2021\)](#)

| Country | CO ₂ e |
|--------------------|-------------------|
| Finland | 141.0 g/kWh |
| Estonia | 170.7 g/kWh |
| International avg. | 170.7 g/kWh |

DISTRICT COOLING

2021 onwards, all the district cooling used by Elisa is emission free.

| Provider | CO ₂ e |
|-------------------|-------------------|
| Helen (Helsinki) | 0 g/kWh |
| Fortum (Helsinki) | 0 g/kWh |

ALL OTHER INDIRECT GHG EMISSION FACTORS (Scope 3)

PRODUCTS AND SERVICES

Sources:

Anders S. G. Andrae & Otto Andersen Int J Life Cycle Assess (2010)

[Apple products' environmental reports \(2015-2020\)](#)

Elisa Corporation, inhouse product analysis

Finnish Environment Institute SYKE (2011), Julia 2030 project

TRANSPORTATION

Sources:

[Defra conv. factors \(2021\)](#)

[LIPASTO \(2016\). Average car](#)

[LIPASTO \(2016\). Electric train](#)

[LIPASTO \(2016\). City bus](#)

[LIPASTO \(2016\). Passenger ship](#)