



ACTIVELY INVOLVED IN THE PREVENTION OF CLIMATE CHANGE



ENVIRONMENTAL REPORT 2019

TOWARDS ZERO EMISSIONS

Through our **Daring Goals**, we are committed to become a zero emission and zero waste company throughout our value chain by 2030. Our work is supported by a certified ISO 14001 environmental management system and by an Energy Efficiency System (EES+) covering our entire business in Finland.

We actively participate in the development of solutions for the prevention of climate change with various parties such as [Sitra's Climate Leadership Coalition](#). We are drafting a new climate and energy strategy for the Finnish ICT sector together with a task force appointed by the [Ministry of Transport and Communications](#). We continue as a [Climate Partner for the City of Helsinki](#), which means that we are committed to contribute to a carbon-neutral Helsinki and to reduce our carbon dioxide emissions.

In addition, we contribute to research related to the energy efficiency of data centers and the global carbon footprint of the ICT sector together with a research group at Aalto University.

REVIEWING CARBON DIOXIDE EMISSIONS

We track our carbon footprint annually in accordance with the calculation principles of the Greenhouse Gas (GHG) Protocol. Telia's emissions have been divided into three scopes in accordance with the GHG Protocol.

- Telia's own emission sources (Scope 1), consisting of fuel consumed by backup power and Telia's cars
- Emissions from purchased energy (Scope 2), which consist of emissions from purchased electricity, district heating and cooling
- Other indirect emissions (Scope 3), which are generated, for example, through purchased products and services and emissions generated by our customer when using Telia's products and services.

In 2019, Telia's carbon footprint covering the entire value chain was approximately 250,000 tCO₂e. The share of Scope 1 emissions was only 0,4% of this, with the share of Scope 2 emissions being approximately 1%. Therefore, over 98% of Telia's emissions are Scope 3 emissions.

The majority of the indirect emissions (Scope 3) are generated by the production of products and services purchased by Telia. These include, for example, consumer electronics sold by Telia, such as mobile phones, laptops and tablet computers. The emissions generated by our customers through the use of Telia's products and services amount to approximately one fifth of the total emissions of value chains. Approximately one tenth of our emissions are emissions generated in the production phase of industrial goods, mainly network equipment. The remaining emissions are generated, for example, in connection with logistics, business travel, employees commuting between their homes and workplaces, the disposal of sold products and operations related to fuel and energy.

We are constantly looking for ways to reduce the emissions from our operations.

For example, we have purchased electricity that is 100% from renewable sources already since 2009. In addition, we engage our suppliers to commit to coordinating their emission targets so that they are in line with our own target setting and we encourage our employees to choose low-emission alternatives in their work and leisure time.

Telia's products and services help our customers cut their carbon dioxide emissions by up to ten times compared to the amount of emissions generated by our sector. This enables our customers to reduce their carbon footprint and we can influence the generation of positive carbon handprint. Various [IoT solutions](#) are an example of our products that help customers reduce their own carbon footprint.

Telia's carbon footprint (tCO₂e)

YEAR	2018	2019
Scope 1		415
Scope 2	5,410	2,262
Scope 3 total*	220,848	247,322

1. Purchased products and services	123,870	141,662
2. Capital goods	25,192	25,113
11. Use of sold products	31,120	38,452
13. Use of services	4,557	9,374
Other categories total	36,110	32,721
All emissions total	226,674	250,608

* A more detailed breakdown of Telia's Scope 3 emissions is available on our [sustainability website](#).



WHAT ARE SUFFICIENT ENVIRONMENTAL ACTIONS?

No one should be surprised to hear that our globe is in great danger. We are all responsible for environmental work, but companies play a key role concerning decisions to be made on the conditions in which the future generations will live. Or can they live? In order to save the world, companies must first and foremost rethink their own operations. This means that we must understand the environmental impacts our operations are causing and aim to prevent and fix them to the best of our ability.

We have promised to reduce our CO₂ emissions and waste to zero within the next ten years. From Telia's carbon footprint, 61% of the emissions are generated by our subcontractors. Because of this, we will only cooperate with companies that share our dream of zero emission.

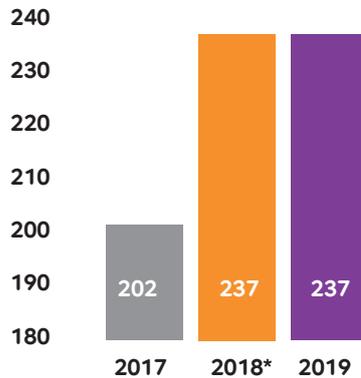
Efficient recycling and extending the lifetime of mobile phones are good ways to reduce the environmental impact of phones. We are

FULL SPEED AHEAD TOWARDS ENERGY EFFICIENCY TARGETS

In our operations, energy consumption has the largest environmental impact. In Finland, strong growth in data usage increases electricity consumption in Telia's networks. For this reason, various energy efficiency projects play a crucial role in managing our energy consumption.

Energy Efficiency Agreements by the Finnish Energy Agency and Motiva play an important role in enforcing Finland's energy and climate strategy. We have joined the Energy Efficiency Agreement for the years 2017–2025 and are committed to improving our energy efficiency by 7.5% by 2025 from the baseline in 2015. We have already nearly met our target, as we reached energy savings of 6.6% in 2019.

Total electricity consumption (GWh)



* In 2018: Telia Inmics-Nebula + HDC were included in reports. In addition, reporting was improved and made more detailed.

MATERIALS FOR CIRCULATION

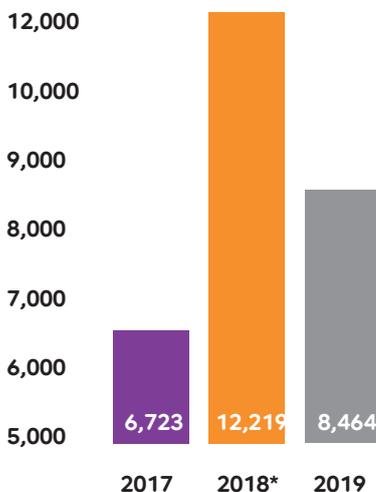
Network construction and maintenance, such as asphalt removal, account for the majority of the waste generated in our operations. In addition, the following waste is generated in our operations: cable waste, electric and electronic waste and old backup power batteries.

We recycle and recover approximately 99% of the generated waste in proper waste processing plants. Our first priority is always to minimise waste generation, maximise reuse and improve the recycling rate. Our goal is to improve the reuse of materials by redirecting them for recycling, which reduces, for example, the amount of waste recovered to energy. Our operational model allows equipment and devices to be reused

in network construction and business customer projects. This ensures that the materials we use in our processes have the longest possible lifetime. In certain product groups, we reuse over 40% of network equipment and business customer devices.

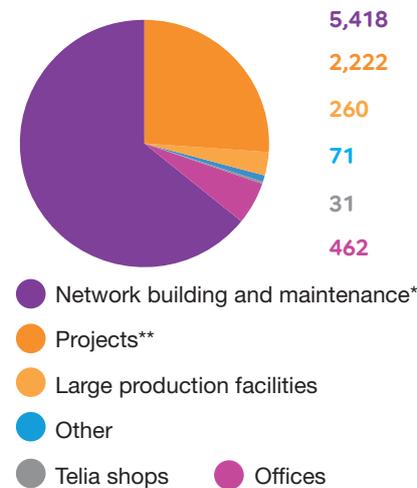
We always strive to repair and reuse functioning mobile devices returned from consumer customers and employees. Devices marked for disposal are recycled through secure recycling cooperation.

Total amount of waste (t)



The total amounts of waste may vary considerably on an annual basis depending on the construction volumes. * Reporting was made more detailed in 2018.

Waste generation (t) 2019



The amount of waste may vary from year to year depending on the volume of construction work. * Network building (asphalt 90%) ** Separate projects (such as demolishing of poles and real estate renovation).

constantly seeking better ways to do this for both consumer and business mobile devices. However, it is not enough to stop creating a mess. Fortunately, according to a recent report by GSMA, an industry organisation for mobile network operators, the mobile technology sector can help other industries achieve up to a tenfold reduction in their carbon dioxide emissions compared to the emissions of the mobile industry. At Telia, we call this cleaning. Cleaning takes place primarily through the development of new, low-emission technologies. For example, soon almost half of all buses in Finland utilise an IoT solution developed by our company, which reduces fuel emissions by as much as 15%. For Onibus this means fuel savings that can be measured in millions of litres on an annual basis. Such measures are our way of fighting against global warming. Whether this is enough is something we will not know until decades from now. But at least we are committed to doing the best we can.

Eija Pitkänen
Sustainability Officer
Telia Finland

TOWARDS BIGGER CARBON HANDPRINT

DISTRICT HEAT FROM FIBRE OPTIC CABLES

Large volumes of discarded fibre optic cables are material that cannot be reused or recycled. Therefore, they could only be placed at a landfill, which requires a special permit. The best solution would be to incinerate fibre optic cables, but that is difficult as such. Early this year, we found a solution for this together with Fortum's Recycling and Waste business unit. Fibre optic cables discarded by Telia are transported to Riihimäki to Fortum's treatment plant for hazardous waste, where a pre-processing method enabling their incineration has been developed. The energy generated from the treatment is used for district heating.

TOGETHER WITH PARTNERS

In spring 2019, we sent a letter to approximately 200 of our biggest subcontractors. In this letter, we explained that going forward, we will cooperate only with partners who share our Daring Goals, that is, our environmental goals. Our cooperation is based on a mutual desire to develop the capability of the supply chain in terms of reducing emissions and waste. In Finland, we have deepened our cooperation with [Eltel](#) and [Empower](#) to reach zero emissions. In addition, this topic is actively discussed with other suppliers as well. We believe that environmental goals can be reached when we work and review the solutions together.



CONNECTED VEHICLE

Various digital smart solutions benefit our customers' business. They make risk management more efficient, improve ecology and make data monitoring easier. Telia's "Connected Vehicle", an intelligent solution for heavy-duty vehicles, enables our customers to control and optimise driving habits and cut back on fuel consumption and mileage. In this area, even small improvements may be significant for the environment. [OnniBus.com](#) was one of the first companies in Finland to adopt Telia's solution for smart transport, which enabled the company to save up to 3–5% in fuel. The savings for 2018 amounted to 275,000 euros. For heavy-duty vehicles, the fuel savings enabled by the smart solution are measured to be as much as 12%. The service has an integrated carbon footprint calculator, which helps customers reduce the carbon footprint of their operations.

VAIHTODIILI AND RECYCLED

Finns purchase approximately 2 million smartphones every year, with the average useful life of a phone being three years. The majority of the environmental impacts of devices are generated during the production phase. When devices are used for a longer time, the environmental impact of production is reduced because less materials are consumed and less waste generated. With [Telia Vaihtodiili](#) (Telia's buyback program), our customers receive a refund on their old device and devices that are returned in good condition get a new life. The devices are carefully inspected and repaired before they are used either as functioning devices, components or, for example, as materials for the production of new devices. Vaihtodiili is increasingly popular. For example, Telia offers these used devices to its customers through the [Telia Recycled](#) concept. Telia Recycled phones are an ecological and affordable alternative for new devices. The devices come with a two-year warranty, the coverage of which is the same as for new devices.

TELIA HELSINKI DATA CENTER

[Telia Helsinki Data Center](#) is the largest and most modern data center in the Nordic countries, and it offers services to all companies. The energy efficiency of the data center was the starting point in the building's design. The result is the most energy-efficient data center in the Nordic countries that uses renewable electricity. The objective is to recover and reuse all the heat that is generated. In the future, up to 25,000 apartments can be heated with the heat generated by the data center.

