

A large, leafy tree stands in a grassy field under a clear blue sky. A person is sitting on a branch of the tree. The tree's shadow is cast on the grass. The background shows a rolling green landscape with some bushes and a path.

SUSTAINABILITY REPORT

2022



Együtt.
Veled



CLIMATE AND ENVIRONMENT PROTECTION

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STRATEGY TARGETS (2021–2030)

One of the main focuses of Magyar Telekom's sustainability strategy for the period 2021–2030 is climate protection and the related operational eco-efficiency targets. Many elements of the previous strategy have been retained and complemented in line with the emission reduction commitments. We have set short- (until 2025) and medium-term (until 2030) targets for the Hungarian affiliates.

Our main target for the period until 2025 is to keep our direct and indirect emissions (scope 1+2) at net zero, while reducing our total energy use by 16% (compared to 2020) and our emissions from energy use by 65% (compared to 2015).

We aim to achieve this through the following sub-goals:

- reduction of our fossil fuel use by 40%
- reduction of electricity consumption in our fixed network by 20%
- reduction of electricity consumption in our mobile network by 15%
- reduction of electricity consumption in our data centers by 13%
- reduction of energy use in buildings by 16%
- reaching 3000 MWh in the use of our own renewable energy sources
- voluntarily offsetting the remainder of our scope 1+2 emissions.

Digitalization plays an important role in Europe's green transition, which would use more and more energy without improving its energy efficiency. To achieve the emission reduction targets we have committed to by 2030, and to make them real emission reductions, we have set a number of energy efficiency targets:

- reduce our fossil fuel use by 70%
- reduce the electricity consumption of our fixed network by 27%
- maximize the increase in electricity consumption of our mobile network at 2%
- reduce the electricity consumption of our data centers by 20%
- reduce the energy use in buildings by 20%
- continue to source 100% of our electricity from renewable energy, of which 6000 MWh will be produced by us

In addition to these reductions, we consider it important to offset the remainder of our scope 1+2 emissions in the period 2025–2030, too.

We also aim to reduce our other indirect emissions (scope 3): by 20% by 2025 and by 30% by 2030, in line with our SBT commitment. To this end, we aim to include the so-called shadow carbon price in our selection criteria for procurement, and we will strive to offer an increasingly wide range of climate-friendly services.

We also intend to explore the possibilities of and rely on the internal carbon market and the internal carbon tax to achieve our emission reduction targets and offsets.

In the 2015–2020 period, it already became the practice to include a climate risk and opportunity analysis in business and sustainability reports in line with the TCFD recommendations. From October 2022, Magyar Telekom listed as a **TCFD-supporter**. In continued TCFD compliance, we intend to build a stand-alone climate risk management process to reduce the company's vulnerability to climate change.

Climate change can only be effectively countered by a shift to a circular economy. As part of the action plan coordinated by Deutsche Telekom, which will run until 2024, we want to contribute to this with the following goals

- increasing the take-back of used mobile phones
- take back and sustainably manage CPE devices used by customers
- our technological waste will not be placed at disposal sites
- sell our own branded products in 100% sustainable packaging

CLIMATE AND ENVIRONMENT PROTECTION

As one of Central Europe's leading ICT service providers, we are committed to sustainable development, including climate and environmental protection, in line with our mission. 2021 was a year of developing a longer-term strategy, replacing the previous 5-year perspective with a 5+5-year vision. Climate protection remained a high priority in our sustainability strategy. Our emission reduction commitments made in 2018, approved by the Science Based Target Initiative (SBTi), and replaced by more ambitious targets in 2019 in response to the IPCC's 1.5°C report, have been placed at the core of the strategy. In the 2030 Strategy, in addition to our commitments to SBTi, which only applied to Magyar Telekom Plc, we have extended our commitments to cover T-Systems Hungary Ltd. Co, too, which are as follows:

- Reduce our Scope 1–2 greenhouse gas (GHG) emissions by 84% compared to 2015;
- Reduce our Scope 3 GHG emissions by 30% compared to 2017.

The European Union's Green Deal also prioritizes energy use and emissions in the telecom sector, recognizing that this sector can make significant contribution to achieving climate neutrality by 2050 through 5G, artificial intelligence, IoT and cloud-based services, but also that these could increase its energy use. It aims to increase energy efficiency and achieve climate neutrality in data centers by 2030 as a first step. This is also one of the main pillars of Magyar Telekom's new climate strategy, in addition to the fact that the Group's entire electricity consumption, including that of its data centers, must be covered from renewable energy from 2021, in line with the parent company's expectations. We are leading the way in this, as we have been following this practice at Magyar Telekom Plc since 2016, and at our national affiliates since 2018. So far, this has been achieved predominantly through purchased guarantees of origin (GoO), but our strategic goals also include the expansion of our own (onsite) renewable capacity and conclusion of long-term power purchase agreement(s) on renewable energy.

Our new strategic goals include enabling our customers to actively participate in climate protection and reduce their emissions. We want to do this at group level through our ICT services, such as smart solutions. Our goal is that by 2030 at least half of our revenues should come from services supporting climate protection.

One of the base years for our emissions reductions is 2015, so in this chapter we present data for 2015 and the last 5 years. The targets approved by SBTi apply only to Magyar Telekom Plc and not to the other affiliates of the Group.

We take our climate protection ambitions so seriously that from 2022 we have also included an annual breakdown of target achievement (ESG performance) in the remuneration system for senior executives of the Magyar Telekom Group.

WE'VE HAD OUR SCIENCE-BASED TARGET APPROVED



In order to provide investors and our value chain partners with a very accurate and detailed picture regarding Magyar Telekom Group's climate protection activities, we have been reporting to the **CDP** (formerly Carbon Disclosure Project) online platform every year since 2010.

Despite the increasing requirements, we achieved a A- rating in 2022, which is better results compared to previous years. The new requirements in the CDP have also played a role in shaping our new strategy.

The European Climate Pact is part of the European Union's Green Deal. Its main objective is to encourage citizens, institutions and all organizations to take action against climate change. Magyar Telekom Plc. has become part of the initiative based on its SBT commitments and has received an outstanding **North Star rating**, thanks to the annual reporting on the CDP platform.

Participation in different organizations addressing climate change

The company has been an active member of the Sustainability Working Group of **ETNO** (European Telecommunications Network Operators) for many years. Members help each other to solve a wide range of sustainability-related problems. The ETNO working group has been particularly involved in shaping EU climate change legislation in 2021.

Energy security was given a prominent role in ETNO's work in 2022, a white paper was published. In its statement addressed to the European Commission and the member states the organization has emphasized that the telecommunications network must be added to the priority list in order to ensure service continuity in the event of planned power outages. Magyar Telekom has also dealt with this risk in its risk management process. In 2022, Magyar Telekom Group remained carbon neutral for the eighth consecutive year. We believe it is important to contribute to a net zero emissions world, for the time being on a market basis.

In order to achieve carbon neutrality, Magyar Telekom Group purchased exactly 188 362 MWh of renewable energy in form of GoO generated by solar-, wind- or hydroelectric power plants – or with renewable energy contract in 2022. From 2022, it was possible to purchase guarantees of origin for renewable energy produced in Hungary, which enabled us to support domestic energy producers. The share of renewable energy in total energy consumption was 75% in 2022. We became carbon neutral by also cancelling 17,119 CER (Certified Emission Reduction) credits

Risks and opportunities

Within the Business Continuity Management (BCM) framework, we identified critical climate risks (floods, heat alerts) and developed a response plan. In 2022, 514 cases had to be investigated due to various weather-related problems, but the level of damage to the networks did not reach response level (HUF 50 M per month).

In 2020, the regular run of our business was heavily disrupted by the pandemic. The Hungarian colleagues worked remotely more than half of their working hours, which resulted in a small reduction of energy consumption in the buildings.

The subsequent waves of the epidemic in 2021 saw slight increase in this proportion, with colleagues spending 60% of their working hours in home office. In 2022, another challenge had to be faced: the energy crisis. This also contributed to the fact that Magyar Telekom was the first in Hungary to experiment with the introduction of the new work schedule in the large corporate sector: between July and October, four teams - including both support and customer relations areas - tested the four-day work schedule as well as market research (internal-external) was also conducted on this subject.

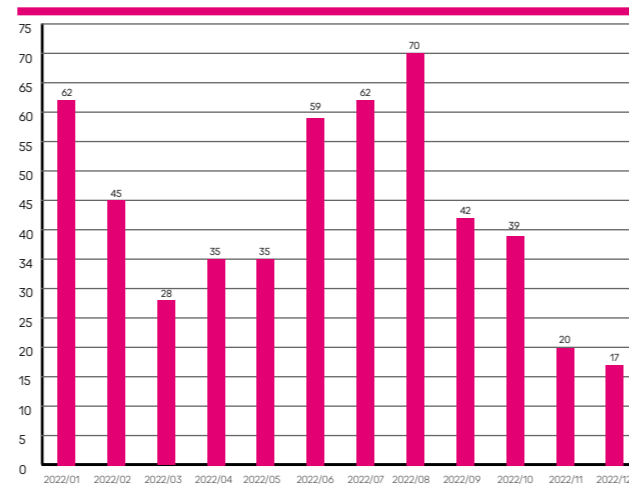
Time spent in remote work was thus still very high (49%). Based on the recommendations of the **TCFD** (Task Force on Climate-related Financial Disclosure) initiative, we have identified risks and opportunities related to our operations, which we published in the **2022 Annual Report**.

The first-round analysis of the physical risks of climate change on infrastructure was carried out in case of Hungarian subsidies - with regard to extreme temperatures, using different climate scenarios (RCP4.5 and RCP8.5). We note here that by improving the spatial resolution of the data, in case of flash floods and forest fires, we are likely to have a lower exposure, but for now we do not have detailed set of data available. Flash floods were the most risky weather event, and the operation of 19–24% of the infrastructure (depending on the scenario used) could be negatively affected by extreme hot weather in the coming decades. This analysis can help to make the infrastructure more resistant to the expected changes during modernization.

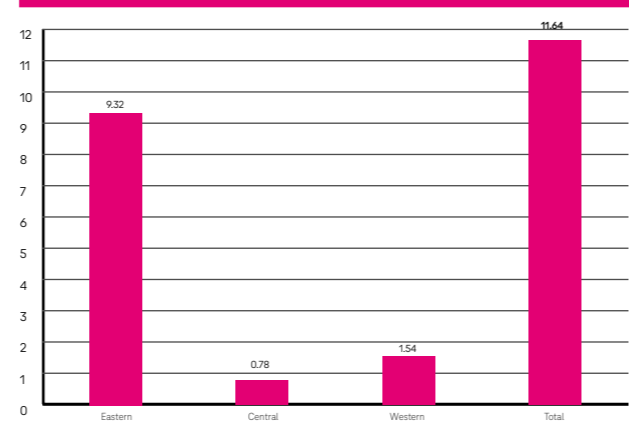
For the modernisation of infrastructure - for which we have earmarked HUF 2 billion for 2023 - we plan to implement the following technological applications: more heat-resistant batteries, economical air conditioning and free-air ventilation. By combining these three technologies, the use of air conditioners can be reduced by up to 90% per year, resulting in energy savings. It is planned to renovate all or part of nearly 1200 sites. The modernisation strategy will reduce the area occupied by technology by around 2000 m².

In setting our emission reduction targets, we have taken into account the current requirements of the Paris Agreement and the EU, as well as IPCC's 1.5°C target, but we assume that regulators will set more stringent emission reduction targets in the future, compliance with which may involve financial risk.

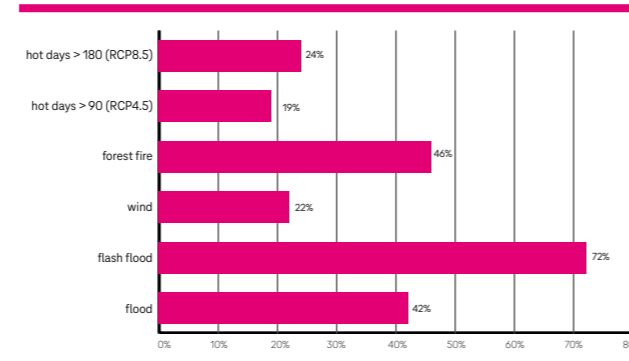
Weather-related damages at Magyar Telekom Plc. in 2022



Regional cost distribution of storm damage restoration associated with service outage at Magyar Telekom Plc. in 2022



Climate vulnerability of Magyar Telekom's sites to specific variables as a percentage of all sites



However, our forward-looking climate strategy, even with stricter regulations, gives us an edge over our competitors.

One of the pillars of our carbon neutral operation is that we use 100% renewable electricity at all affiliates, so future price uncertainty poses a risk to this pillar. The more consumers switch to green energy, the more the price may rise, which in the case of Magyar Telekom could mean tens of millions of forints in extra expenditure. In addition, however, long-term renewable use can continue to be a business advantage as our customers increasingly look for sustainable products and services. As part of our new strategy, we aim to mitigate this risk, including onsite renewable energy generation and reducing electricity consumption.

Climate change can adversely affect not only our own operations but also our supply chain. We can mitigate this risk by assessing our suppliers, and we have a shared interest in building a resilient network of suppliers. For more information, see our **Stakeholder / Suppliers section**.

We especially focus on procuring energy-efficient equipment for our networks, ensuring that all our products and services meet the environmental sustainability requirements, and making sure that our customers can take advantage of the opportunities we offer to save energy and environmental resources. For more information, see the **Digitalization chapter**.

Race to Zero campaign

Magyar Telekom was the first and only Hungarian company to be listed in the **UNFCCC Race to Zero campaign** in 2020. The aim of the campaign is to encourage businesses, cities and even public institutions to support the achievement of the Paris Agreement targets by implementing voluntary emission reductions in line with the Paris Agreement. The results of the campaign were presented at the climate negotiations in Glasgow in 2021, with the aim of increasing the ambition of the signatories to the Paris Agreement to do their part to maximize global warming at 1.5°C, if possible. We have been included in the Race to Zero by joining the Global Compact and our ambitious commitment to the SBTi. Another 9 Hungarian entities joined the campaign in 2022, but Magyar Telekom remains the only Hungarian large enterprise to take part.



RUNNING OUT OF GBS INCLUDED IN YOUR PACKAGE?

CHOOSE THE **GREEN** 1GB OPTION THAT ENABLES YOU TO ROAM THE NET AND FIGHT CLIMATE CHANGE AT THE SAME TIME.

ExtraNet Green 1 GB option

We wish also to give our customers the opportunity to choose a service that contributes to climate protection, if they share our commitment to fighting climate change. This is why we created our ExtraNet Green 1 GB option in 2019. In 2021 we continued to guarantee that for those who choose the option, we will generate the equivalent amount of energy needed to transmit their data, using our own solar PV system. In 2022, a higher proportion of customers chose this expansion option out of the 1GB options than in previous years.

CLIMATE PROTECTION AND ENERGY EFFICIENCY

The carbon dioxide equivalent (CO_{2e}) – taking into account the global warming potential from the IPCC 5th Assessment Report - continues to be used as an indicator for the quantification of Magyar Telekom Group's GHG emissions. Emissions are not measured but calculated using the **Greenhouse Gas (GHG) Protocol**¹ methodology. Emissions from the bio-component of fuels are not reported separately. Following the GHG Protocol, we report our indirect (scope 2) emissions both as location-based and as market-based. In market-based terms, Magyar Telekom Group's emissions are at net zero for the eighth consecutive year.

More accurate calculations for the new strategy

Details of Magyar Telekom Group's GHG emissions are shown in the table below. With the new strategy, the calculations have been refined to better reflect reality, so the figures applied in reports before 2021 have been slightly revised. The activity data (quantities of energy used) have not changed, but the emission factors have been changed to country-specific values for the year in question². The quality of emission inventories can be improved by taking regional or even local specificities into account. Since country-specific data are available for Hungary and partly for Macedonia, we have chosen to use them instead of the specific emissions found in the international literature.

Magyar Telekom Group's overall and affiliates overall GHG emissions (tCO_{2e})

GHG EMISSIONS (tCO _{2e})	2015	2018	2019	2020	2021	2022
Natural gas	7 102	6 898	3 416	3 135*	2 736*	2 463
Oil	1 041	383	429	457	356	274
Fuel (total)	14 668	13 006	12 531	9 557*	9 608*	10 027
<i>Fuel (diesel)</i>	7 838	7 383	7 507	6 014*	6 010*	6 033
<i>Fuel (gasoline)</i>	6 830	5 624	5 024	3 543*	3 598*	3 994
Electricity	108 272	86 911	76 873	66 201	67 509*	63 085
District heating	4 127	3 826	4 808	4 909	4 601	4 355
Total emissions: scope 1+2 location-based	135 210	111 024	98 058	84 260*	84 809*	80 203
Magyar Telekom Plc.	104 327	82 919	67 458	59 499*	61 847*	57 791
T-Systems Hungary	4 610	5 201	5 181	3 563*	3 125*	3 659
Makedonski Telekom	26 273	22 904	25 419	21 198*	19 837*	18 753
Total emissions: scope 1+2 location-based	135 210	111 024	98 058	84 260*	84 809*	80 203

Another important consideration was that specific emissions may vary from year to year, reflecting changes in the energy mix or even technological developments, so we replaced time-constant factors with time-dependent values. In many cases, emission factors valid for a given year are available after the publication of Magyar Telekom's sustainability report, so depending on the availability, we make subsequent corrections in order to increase the accuracy, and until then, we replace the missing ones with the nearest available factors in time. The data in the report in the last two years therefore show greater uncertainty compared to the previous period.

Emission factors for electricity for Hungarian affiliates are based on the AIB³ publication and for Macedonian data on the basis of the official national statistical publication. In the case of energy carriers, the Hungarian **National Inventory Report (2022)** was the source of the emission data. For consistency, the recalculated data are reported for the whole timeline.

* Compared to the previous report, the data have changed due to the update of emission factors.

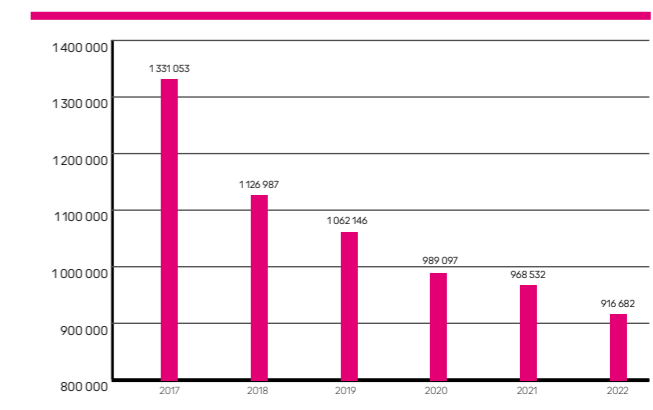
In 2022, the total GHG emissions of Magyar Telekom Group decreased by 41% compared to 2015, amounting to 80 203,4 tons of CO_{2e}, for which Magyar Telekom Group consumed a total of 916 682 GJ of energy in 2022.

Within Magyar Telekom Group, Magyar Telekom Plc. is responsible for the vast majority of scope 1+2 emissions, accounting for 72% of the Group. The table summarizes the direct and indirect emissions of the affiliates, excluding market measures, for the years 2015–2022.⁴

Magyar Telekom Plc. scope 1+2+3 GHG emissions (tCO_{2e})



Magyar Telekom Group's total energy consumption (GJ)



Magyar Telekom Group continuously strives for energy efficiency. As a result of the measures adopted, the total energy consumption of the Group significantly decreased compared to 2015 levels.

¹ Greenhouse Gas Protocol is a standard developed to calculate GHG emissions, which is a methodology also recognized by the Science Based Target initiative

² The specific emission values of cars will be updated as soon as available.

³ Data can be found on the following website dating back to 2015, currently up to and including 2021.

⁴ Makedonski Telekom's 2022 data in electricity, renewable energy and fuel consumption are based on estimation for December month, therefore these data may change (clarified) in the next report.

DIRECT OR SCOPE 1 EMISSIONS

Magyar Telekom Group's Scope 1 emissions (tCO_{2e})

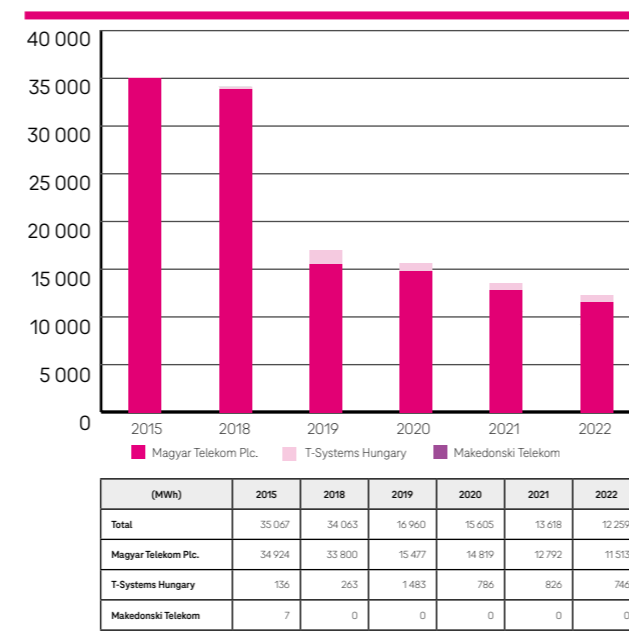
SCOPE 1 EMISSIONS (tCO _{2e})	2015	2018	2019	2020	2021	2022
<i>by source</i>						
Natural gas	7 102	6 898	3 416	3 135*	2 736*	2 463
Diesel and heating oil	1 041	383	429	457	356	274
Fuel (total)	14 668	13 006	12 531	9 557*	9 608*	10 027
<i>by affiliate</i>						
Magyar Telekom Plc.	17 461	15 896	11 825	10 269*	10 060*	10 161
T-Systems Hungary	3 045	3 114	3 270	1 697*	1 521*	1 569
Makedonski Telekom	2 305	1 277	1 282	1 184*	1 118*	1 033
Total Scope 1 emissions	22 811	20 288	16 377	13 149	12 699	12 763

* Compared to the previous report, the data have changed due to the update of emission factors.

Natural gas consumption

There was a significant 50% reduction in overall natural gas consumption and consequently emissions between 2018 and 2019, following our relocation to our new energy-efficient headquarters building in Hungary. After 2021 in 2022 again a smaller decrease of 10% can be attributed primarily to real estate sales and energy saving measures voluntarily introduced by Magyar Telekom to deal with the energy crisis declared by the Hungarian government.

Natural gas consumption (MWh), Magyar Telekom Group



Car fleet

At Group level, the number of vehicles in the fleet decreased by 3% in 2022 compared to 2021, the number of benefit cars increased, while the number of service cars decreased. As the "green transition" of the fleet continued in Magyar Telekom Group, the number of hybrid cars increased by 30% compared to the previous year, repeating the expansion of the previous year.

Fuel consumption increased by 5%, while mileage increased by 6% at Group level compared to the previous year, resulting in an increase in the vehicles' average consumption (6%).

The consumption of electric and hybrid cars soared from 10.9 MWh to 81.8 MWh. The slow development of the charging station network has led to a shift from pure electric vehicles to hybrid vehicles.

Fleet composition (number of vehicles), Magyar Telekom Group

FLEET COMPOSITION (PCS)	2015	2018	2019	2020	2021	2022
Total	3873	3568	3489	3368	2883	2805
<i>By fuel type</i>						
<i>Diesel</i>	2244	2027	1956	2002	1659	1574
<i>Gasoline</i>	1541	1336	1266	1064	838	730
<i>Hybrid</i>	85	200	260	295	381	496
<i>Electric</i>	3	5	7	7	5	5
<i>By usage type</i>						
<i>Benefit car</i>	1423	1450	1587	1417	1217	1226
<i>Service use</i>	2450	2118	1902	1951	1666	1579

Within the Group, Magyar Telekom Plc. still has the largest fleet.

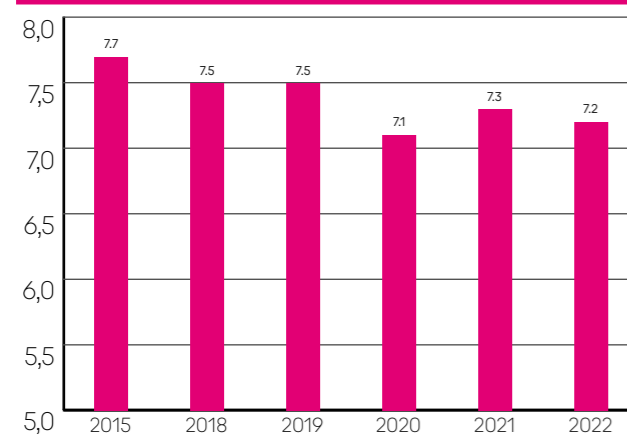
Number of cars, Magyar Telekom Group



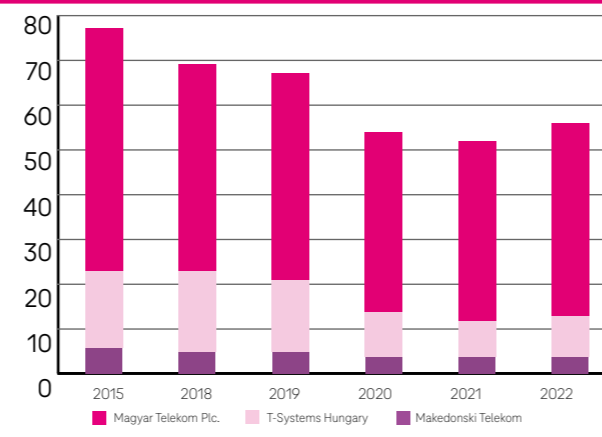
Fuel consumption (liter), Magyar Telekom Group



Average consumption (l/100km), Magyar Telekom Group



Mileage (million km), Magyar Telekom Group



(million km)	2015	2018	2019	2020	2021	2022
Total	77	69	67	54	52	56
Magyar Telekom Plc.	54	46	46	40	40	43
T-Systems Hungary	17	18	16	10	8	9
Makedonski Telekom	6	5	5	4	4	4

INDIRECT OR SCOPE 2 EMISSIONS

Our Scope 2 emissions are determined in two ways, based on the GHG Protocol's recommendations. We use the so-called location-based method to determine our total emissions, while the market-based calculation reflects how the company can choose to regulate the market given the options available.

The Group's total local emissions decreased by 6% compared to 2021, the fact that the proportion of renewables in the Macedonian electricity mix has increased drastically contributed to the decrease.

Magyar Telekom Group's Scope2 emissions (tCO_{2e})

SCOPE 2 EMISSIONS (tCO _{2e})	2015	2018	2019	2020	2021	2022
Scope 2 emissions – location-based						
<i>By source</i>						
Electricity	108 272	86 911	76 873	66 201	67 509	63 085
District heating	4 127	3 826	4 808	4 909	4 601	4 355
<i>by affiliate</i>						
Magyar Telekom Plc.	86 866	67 022	55 633	49 230	51 787	47 629
T-Systems Hungary	1 565	2 087	1 912	1 866	1 604	2 090
Makedonski Telekom	23 968	21 627	24 136	20 015	18 719	17 721
Total Scope2 emissions	112 399	90 737	81 681	71 111	72 109	67 440
Scope 2 emissions – market-based						
<i>by source</i>						
Electricity (adjusted by green energy consumption)	32 522	11 046	20 704	14 697	1 016	0
District heating	4 127	3 826	4 808	4 909	4 601	4 355
<i>by affiliates</i>						
Magyar Telekom Plc.	11 100	3 213	4 065	3 866	3 767	3 298
T-Systems Hungary	1 581	313	439	643	451	659
Makedonski Telekom	23 968	11 346	21 009	15 097	1 399 ⁵	397
Total Scope2 emissions	36 649	14 872	25 513	19 606	5 617	4 355

*Compared to the previous report, the data have changed due to the update of emission factors.

⁵ Corrected data. It was listed incorrectly in the 2021 Sustainability Report.

Electricity

Magyar Telekom Group continued to strive for energy efficiency in 2022, with electricity consumption decreasing by 7% compared to 2021, and electricity consumption accounting for 74% of total energy consumption. We are increasing our energy efficiency in line with our Sustainability Strategy and ISO 50001 certification guidelines.

As a responsible company, Magyar Telekom Plc. gives priority to energy efficiency issues. We continuously measure, monitor and evaluate our energy consumption and the significant influencing factors related to it, both in terms of real estate and technological infrastructure (or technology and related service equipment). Based on these measurements, we continuously explore energy efficiency opportunities, which we implement in the form of projects in line with our energy management objectives.

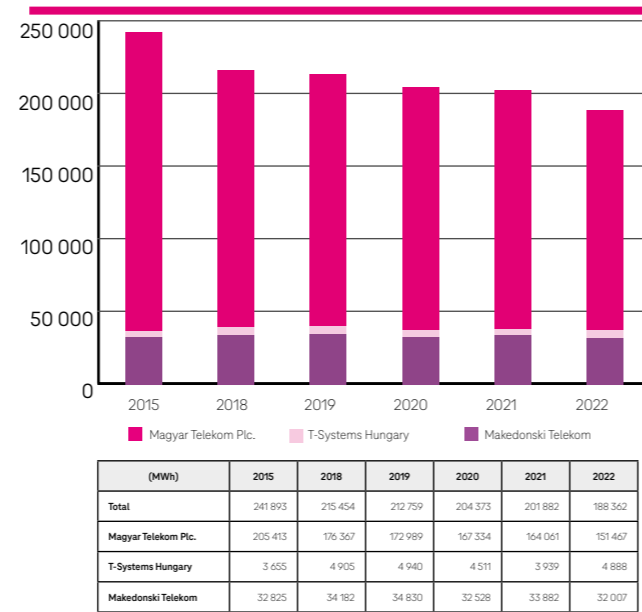
Improvements implemented in 2021 and 2022 have reduced Magyar Telekom Plc.'s energy consumption by a total of 14,300 MWh, consisting of:

- phasing out of the copper network, replacing it with optical networks
- partial switch-off of the 3G network
- modernization of mobile network equipment
- intensive use of energy-saving software applications
- phasing out and decommissioning of obsolete transmission technologies (PDH/SDH)
- replacement of batteries
- replacement of charging equipment
- replacement of technological air conditioning systems
- site optimization.

We are investing significant resources into improving our energy management system and related automation and intelligence, and increasing the number of metering points.

We do this so that energy consumption anomalies can be identified in time and properly addressed as soon as possible to prevent unnecessary and unjustified consumption.

Electricity consumption⁶ (MWh), Magyar Telekom Group



Employee community solar panel project

Magyar Telekom was the first in Hungary to introduce the community solar panel project. Under the project, our colleagues rent solar panels from us for a year and the energy generated is used locally. In the first project, we installed solar panels on top of our educational building in Kékvirág street, and in 2020 two more solar systems started operating in Szeged.

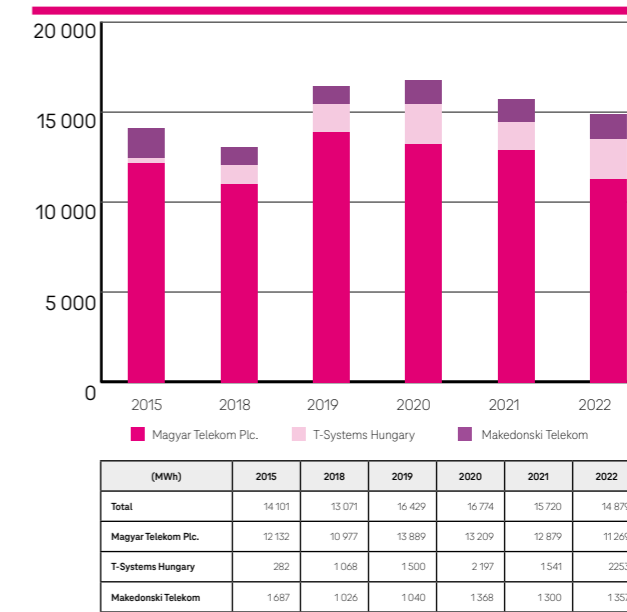
The employee solar project was announced in 2022, now including the Szeged solar panels, so a total of 200 colleagues participated again in the project. Nothing shows the success of the program better than the fact that the quantity offered sold out even faster than before. Since their installation, the solar panel systems have produced a total of about 318 MWh of clean energy, of which 94,76 MWh in 2022. For **Kékvirág utca, Szeged I.** and **Szeged II.** the current production can be monitored.



District heating

The use of district heating decreased by a total of 5% on Magyar Telekom Group level compared to 2021, while that of the two affiliates increased slightly, the consumption of Magyar Telekom Plc. decreased. Some of the decrease in energy consumption was the result of the sale of real estate and partly due to measures for reducing energy consumption.

District heating (MWh), Magyar Telekom Group



OTHER INDIRECT (SCOPE 3) EMISSIONS

We started to measure our Scope 3 emissions more accurately as we became part of the Science Based Target initiative. In determining our emissions, we used our own operational numbers, GHG Protocol indicators and CDP data or publicly available reports from our suppliers. The emissions relate only to Magyar Telekom Plc.'s operations and as committed, we report these indirect emissions from 2017. Due to corrections to the emission factors related to electricity (see scope 2 emissions), several recalculations have been made in this category to maintain consistency across the timeline. In 2022, we refined the methodology of several categories (business trips, use of sold products), and more detailed activity data (waste) enabled more accurate calculations.

Equipment operated and leased by our customers

The CPE equipment operated by our customers consume a significant amount of energy, but they are essential for the use of our services. Since 2016, we have been accurately monitoring all networked devices and their performance (set-top boxes, modems, terminals). Taking into account the user numbers at the end of 2022, the energy consumption of the devices used by our customers to connect to our services was 230.8 GWh of electricity, which generated nearly 68 kilotons of CO_{2e} emissions. The specific energy consumption of CPE devices decreased by 1% compared to 2021, it is still 20% lower than in 2016, however, their number is constantly increasing.

Business travel

In 2022, after the end of the pandemic, the number of business trips saw high increase compared to 2021. For business trips, we took into account the emissions of air and rail transport based on the 2021 publication of the European Environmental Protection Agency, while for cars we calculated with the emissions factors of Magyar Telekom's fleet.

Home office

Magyar Telekom has continued to promote teleworking during the pandemic, with mutual benefits for both employees and the employer. According to a survey conducted in 2017, around a third of our colleagues choose to travel by car, which means travelling an average of 40 kilometers a day. Colleagues who choose public transport (around two thirds of our employees) travel 30 kilometers a day. In 2022, we recorded 518 858 teleworking days – an increase compared to 2020 – saving our colleagues nearly 17,5 million kilometers of travel and 92 years of travel time. These figures show that teleworking is a key driver of travel replacement. For more information on non-typical forms of employment, see [the section on Diversity and equal opportunities](#).

In the case of employee commuting, we also took into account the energy consumption during telecommuting among the scope 3 emissions based on ecoact's methodology guide prepared in 2020 (Homeworking emissions, White Paper).

⁶ The procured electric power volume does not include energy produced by us.

Magyar Telekom Plc. Scope 3 emissions (tCO_{2e})

GHG EMISSIONS (tCO _{2e}) BY THE FOLLOWING CATEGORIES	BASIS OF THE CALCULATION	2017	2018	2019	2020	2021	2022
1. Procured goods and services	purchase values and reported company emissions	16 733	16 920	25 828	14 052	39 484	30 274
2. Tangible assets	purchase values and reported company emissions	12 311	14 929	22 789	14 593	21 012	9 948
3. Activities related to fuel, energy	purchase values and reported company emissions	4 132	1 327	2 026	710	1 140	9 000
4. Upstream transport and distribution	sold products	10 909	12 338	11 913	11 289	11 947	11 080
5. Waste	waste quantities and country/EU specific emission factors	3 330*	3 452*	3 140*	2 096*	1 643*	2 044
6. Business travel	travel data and EU specific emission factors	447*	366*	309*	63*	37*	191
7. Commuting	travel habits based on an internal survey	47 308	2 638	2 044	1 331	1 155*	1 343
8. Upstream leased assets				Not relevant			
9. Downstream transport	km traveled by transporters	380	637	764	674	737	592
10. Processing of products sold				Not relevant			
11. Use of products sold	energy use during the lifecycle of sold products	40 630*	50 411*	25 519*	41 047*	38 332*	36 449
12. End of lifecycle management of products sold	sold products	2 417	2 734	2 639	2 501	2 647	2 455
13. Assets leased out	energy consumption of CPEs	63 781	66 390	55 324	51 689	64 445*	67 562
14. Franchise activities				Not relevant			
15. Investments				Not relevant			
Total		202 377	172 142	152 297	140 047	182 579	170 939

* Compared to the previous report, the data have changed due to the update of emission factors, changes in the calculation methodology, and the detail of the available data.

ENERGY AND CLIMATE EFFICIENCY

Energy efficiency remains a priority among the efficiency targets identified in previous years, while a climate efficiency indicator has been introduced from 2021, in line with the new strategy. Both indicators are sector-specific and are only provided for Magyar Telekom Plc, and we aim to continuously improve these indicators in line with the digitalization and climate goals set out in the strategy.

Our energy intensity is measured by the electricity intensity of our telecommunications network, i.e. the amount of data transmitted per unit of electricity consumption (in GBit/kWh).

For our climate sensitivity, we look at the amount of greenhouse gases emitted into the atmosphere per unit of data transmitted, expressed in kg CO_{2e}/TB. For the calculations, we have only taken into account our electricity consumption related to the technology.

Hungarian member companies are treated as a single entity for the purposes of data clearing.

ENVIRONMENTAL EFFECTS

The developments of Magyar Telekom Plc. are basically not subject to impact assessment. In 2022, we impacted nature conservation areas in the following cases:

- Sukoró – authority opinion
- Kisdörgicse – authority opinion
- Vámosmikola – impact analysis

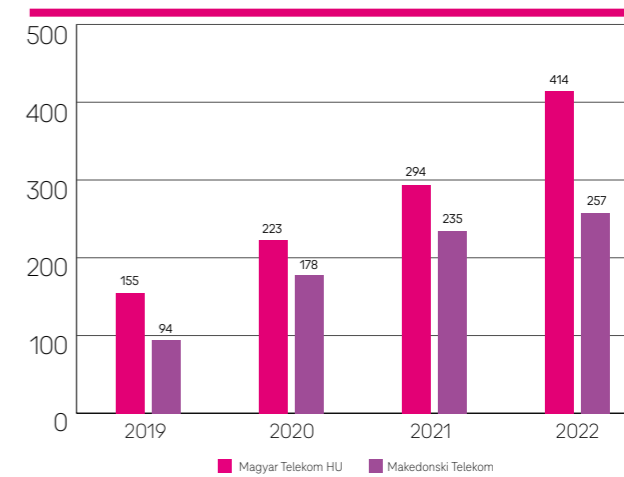
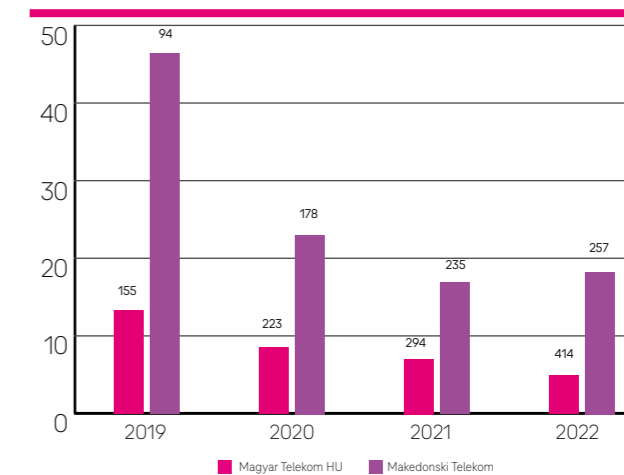
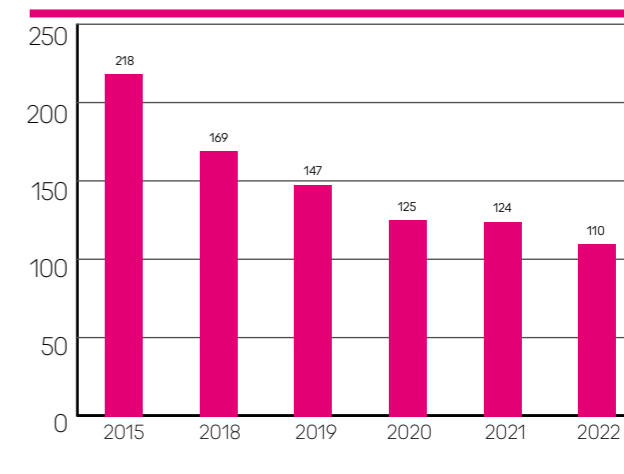
The relevant authorities in the nature conservation areas concerned have not raised any objections to the projects. There was no damage to the natural environment. We continue to respect the protected areas and plan our developments in compliance with all relevant laws and regulations.

Land use, landscape effect

It is important for the group that its investments are realized only with the necessary amount of land use, if possible by maintaining the original condition of the environment, and that its buildings fit into the local landscape as much as possible.

The composition of the mobile network has not changed significantly, with 8,115 sites (base stations, repeaters, micro connections) in 2022 at group level, 72 more than last year, which shows the 5G network expansion, too. The number of shared-use towers was 1,871, up by 43 compared to the previous year. The total number of towers in use also showed an increase.

⁷ The previously published data included only the data traffic on the IP core network, so the present data are not comparable to the previous report.

Energy efficiency (Gbit/kWh), Magyar Telekom Group⁷Climate efficiency (kg CO_{2e}/TB), Magyar Telekom GroupEmissions per revenues (kg CO_{2e}/Mft), Magyar Telekom Group

Noise and vibration protection, electric and magnetic fields (EMF)

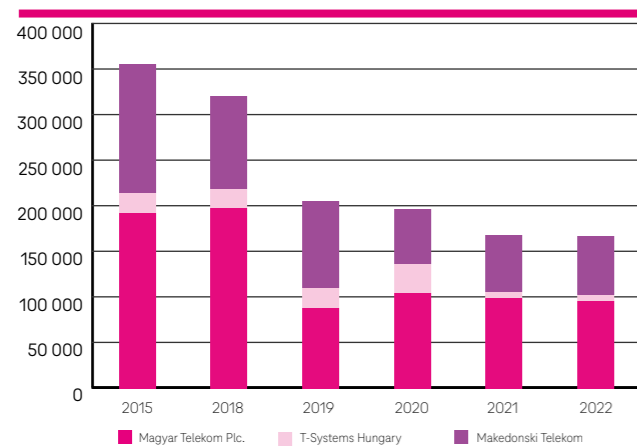
In the operation of our sites, we need to pay particular attention to the impact of outdoor air conditioning and diesel-fueled emergency generators as potential noise sources. In 2022, there was one complaint from the public about the air conditioning installed in one building. The measurement by the accredited measuring station confirmed that the noise limit value was not exceeded.

There were 23 cases of measurements related to electromagnetic radiation, including 1 due to a request from a resident, 8 due to requests from landlords and 3 due to contractual obligations, and 10 cases due to changes in technical content or modernization. In all cases, the results of the measurements were in compliance with the relevant standards

Water consumption

Magyar Telekom Group uses water exclusively for social purposes. Water consumption at group level did not change significantly compared to previous year.

Water consumption (m³), Magyar Telekom Group



(MWh)	2015	2018	2019	2020	2021	2022
Total	355 121	319 717	205 065	195 659	167 801	166 724
Magyar Telekom Plc.	192 000	197 000	88 000	104 000	99 000	95 274
T-Systems Hungary	21 600	21 600	21 600	32 159	6 801	6 950
Makedonski Telekom	14 1521	101 117	95 465	59 500	62 000	64 500

Fulfilling manufacturer and distributor duties

We work with manufacturers to ensure that environmental awareness is part of the manufacturing and recycling processes of our devices. Procurement requirements are discussed in more detail in the [Stakeholders/Suppliers section](#). Read more about products with sustainable features in the [Digitalization section](#).

It is important to us that we only burden our environment to the extent necessary, so we pay particular attention to the inspection, repair and re-deployment of equipment used in our network. The recycling rate for CPE equipment was 57,5% in 2022.

Hungarian companies are fulfilling their obligations as manufacturers and distributors as follows:

- In the case of electronic equipment, which is also covered by the Product Fees Act, the companies chose to pay the product fee, the state utilization system. Magyar Telekom Plc. paid the mandatory product fee, the annual collection expectation was 45% in the IT category. (The state system still does not provide company-level data on the results achieved.)
- In the case of batteries, the obligation has been partially delegated to an intermediary organization by Magyar Telekom Plc, as allowed by the law. Its contracted partner, ReLem Nonprofit LLC over-achieves the statutory requirement every year.

On our websites, we inform our customers about the possibility to return used and waste equipment and batteries in accordance with the legal requirements. All manufacturers of the devices we sell have the energy efficiency certificates required in the European Union and comply with the environmental legislation.

Our customers can find information about the service life of the devices, their recycling and the materials used in our stores on the basis of the manufacturer's declarations. The energy efficiency of the network equipment purchased is a priority

Air pollutants

In Hungary, we pay an air pollution charge in accordance with national legislation. The amount of pollutants emitted by the boilers owned by Magyar Telekom Plc. is 0.352 kg/h for NOx and 0.0743 kg/h for CO, according to the relevant air quality protection measurement reports. Sulphur dioxide is not monitored because desulphurized fuel is the standard in Hungary.

The total emissions are slightly higher compared to the previous year, because then due to the pandemic, fewer colleagues were in our buildings than in 2022, and then energy consumption was also reduced. At Magyar Telekom, we are doing our utmost to manage the risks associated with our fluorinated greenhouse gas (F-gas) equipment. The amount of F-gases released into the atmosphere during leaks is recorded in the register of the National Climate Protection Authority by our service partners, and we started processing the data at the end of 2022. In the future, we would also like to take this source into account in GHG emissions.

WASTE

The quantity and quality of waste generated is largely dependent on ongoing telecoms projects and developments: at group level, total waste increased by 20% in 2022 compared to the previous year. While the amount of hazardous waste and municipal waste, as in previous years, decreased, the amount of technological and other waste (e.g. building demolition waste) increased significantly. The volume of recycled waste was 57%, an indicator continually increasing since 2017.

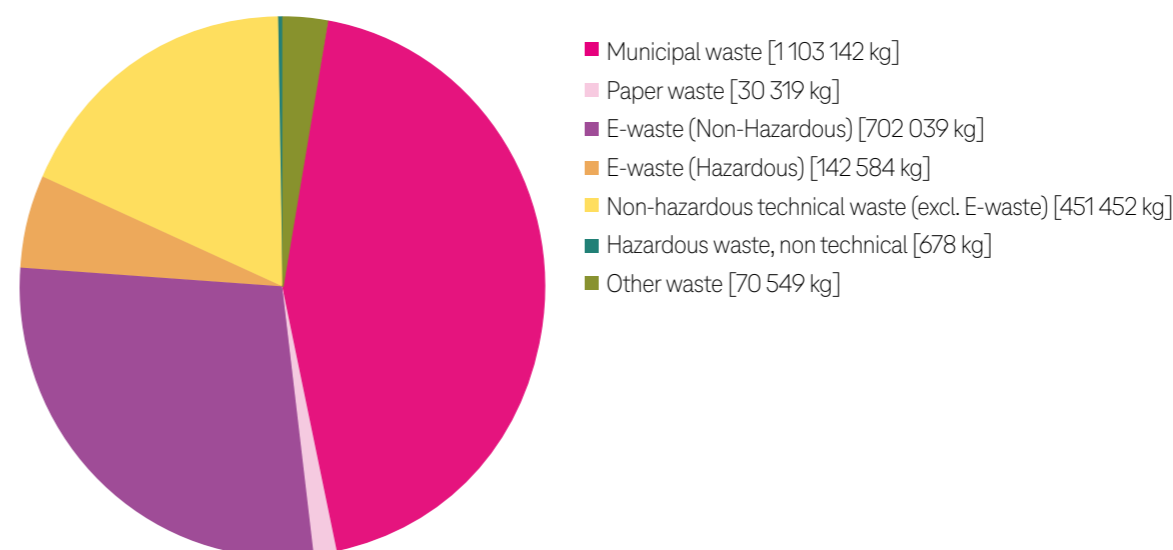
To reduce the environmental waste burden:

- our used assets are recycled within the company wherever possible, sold, rented/leased or given to our employees or to external partners free-of-charge (donation);
- we provide separate waste collection facilities at sites where possible;
- we improve efficiency through review of contracts and collection points, inspections, communication;
- the group-level DT regulation on the management of cable waste was published in 2015, and we comply with it.

In 2021, a new project was launched across Deutsche Telekom's affiliates to shift to a circular economy, reduce waste and thus contribute to global climate protection. Goals include increasing the take-back of mobile phones used by customers, avoiding technological waste going to landfills and 100% sustainable packaging for private label products.

A total of 57% of the waste generated by Magyar Telekom Group's activities was recycled. In the case of municipal waste, local public services are compulsory to use, therefore only estimated quantities are available; waste is deposited in authorized landfills. The company does not transfer waste directly for incineration or composting.

Types of waste generated (kg), Magyar Telekom Group



Volume of waste generated (kg) and ratio of recycling, Magyar Telekom Group, 2015–2022

	2015	2018	2019	2020	2021	2022
Total waste [kg]	3 865 417	4 297 995	4 221 577	2 632 698	2 087 143	2 500 763
Waste turned over for utilization [kg]	528 307	835 543	973 447	776 650	906 307	1 431 096
Utilization rate (%)	14%	19%	23%	30%	43%	57%

The management and supervision of environmental reports filed by our stakeholders remain the responsibility of the sustainability advisor and the Sustainability Squad⁸. Our contact details for receiving comments have not changed (sustainability@telekom.hu).

We will endeavor to respond to any suggestions for improvement, complaints or enquiries received as soon as possible

EU TAXONOMY COMPLIANCE

The EU taxonomy aims to create a uniform understanding of which activities and investments are sustainable. For this, the European Commission has defined criteria with metrics. The businesses affected have an obligation to report on how much of their turnover comes from the economic activities covered by the EU taxonomy. In addition, companies must disclose the extent to which they invest in these economic activities, and what level of operating expenditure is associated with these activities.

Six environmental objectives

The first criteria regarding which economic activities are to be classed as environmentally sustainable in accordance with the EU taxonomy were agreed in 2021. They apply to the taxonomy environmental objectives “climate change mitigation” and “climate change adaptation.” The taxonomy includes further environmental objectives in the areas of “the sustainable use and protection of water and marine resources,” “the transition to a circular economy,” “pollution prevention and control,” and “the protection and restoration of biodiversity and ecosystems.” The European Commission has not yet published any criteria for these objectives, however.

The EU taxonomy distinguishes between economic activities that are “taxonomy-eligible” and “taxonomy-aligned”:

- “Taxonomy-eligible” economic activities are those activities for which concrete sustainability criteria are listed in the taxonomy (Annexes I and II of the Delegated Regulation (EU) 2021/2139).
- “Taxonomy-aligned” economic activities meet these criteria in full. To be taxonomy-aligned, an economic activity must make a substantial contribution to one of these six environmental objectives while at the same time avoiding any negative impact on other objectives (the principle of “do no significant harm” or DNSH). In addition, the company must meet the minimum social standards defined in the Taxonomy Regulation.

Substantial contribution

to at least one of the six environmental objectives of the EU taxonomy:

- Climate change mitigation
- Climate change adaptation
- The sustainable use and protection of water and marine resources
- The transition to a circular economy
- Pollution prevention and control
- The protection and restoration of biodiversity and ecosystems

Do no significant harm

An activity can only be considered to contribute to one of the six objectives if it has no other significant negative environmental impact (DNSH principle).

Compliance with minimum safeguards

The minimum safeguards are social requirements in accordance with

- the OECD Guidelines for Multinational Enterprises,
- the UN Guiding Principles on Business and Human Rights,
- the Core Labour Standards of the International Labour Organization (ILO),
- and other requirements of European legislation.

Implementation at Magyar Telekom

The following economic activities carried out by Deutsche Telekom are currently taxonomy-eligible (the activity numbers refer to Annex I of the Delegated Regulation (EU) 2021/2139, which lists the criteria for the taxonomy environmental objective “climate change mitigation”) and are relevant to Magyar Telekom Group’s activities:

- Data processing, hosting and related activities (8.1)
- Data-driven solutions for GHG emissions reductions (8.2)
- Transport by motorbikes, passenger cars, and light commercial vehicles (6.5): Magyar Telekom vehicle fleet (cross-cutting activity)

Details about these activities we summarise below.

Data processing, hosting and related activities

Taxonomy activity 8.1: Data processing, hosting and related activities

In 2022 T-Systems Hungary (today Telekom System Integration Ltd) operated data centres we assessed according to taxonomy.

The EU taxonomy stipulates that the refrigerants used in data centre cooling systems may not exceed a global warming potential value of 675. This criterion is not currently met by any of the three data centre. Therefore, the taxonomy aligned revenue, capital expenditure and direct expenses are all 0 percent. We will make the change to taxonomy-aligned refrigerants as part of the regular refurbishment program for our data centres. We will carefully review the individual data centres’ compliance with the criteria for preventing significant harm to the remaining environmental objectives in each case as soon as they fulfil the aforementioned climate change mitigation requirements in full. This will enable us to continually increase the taxonomy alignment of our data centres.

⁸ The Sustainability Squad will continue to operate under a new name, the ESG Squad, based on Internal Instruction 404, updated in Q1 2023.

Data centres in addition must comply with the **European Code of Conduct for Energy Efficiency in Data Centres** to be considered as making a substantial contribution to climate change mitigation in accordance with the EU taxonomy. As none of the sites operated directly by T Systems currently comply with this Code of Conduct, which is a requirement of the EU taxonomy, we are therefore classifying the data centres used for economic activity 8.1 as non-taxonomy-aligned in the reporting year.

Data-driven solutions for GHG emissions reductions

Taxonomy activity 8.2: Data-driven solutions for GHG emissions reductions

We associate those solutions and products that are predominantly aimed at the provision of data and analytics enabling GHG emission reductions with the economic activity Data-driven solutions for GHG emissions reductions (8.2). These are, in particular, solutions and products that Deutsche Telekom has incorporated into their Enablement Factor and Sustainable Revenue Share ESG KPIs, and/or that have been awarded their #GreenMagenta label. We have identified the following taxonomy-eligible services within our Group-wide business activities:

- Business-related video conferences (saves travel-induced CO₂ emissions)
- Workplace and cloud solutions (increases energy efficiency by improving server utilization)
- IoT solutions (saves CO₂ emissions through, for example, smart thermometer)

Taxonomy-eligible solutions under economic activity 8.2 represent 0.36 percent of turnover. Business-related video conferences and cloud solutions make a particularly substantial contribution in this regard.

A life-cycle analysis is required as evidence of taxonomy alignment. This must show that a solution results in substantial greenhouse gas emission reductions both over and beyond its entire life cycle in comparison with the relevant reference solution available on the market. We understand reference solutions to be alternative solutions that would typically be used in a company in our footprint markets. This assumes that the companies are aligned with best practices. The technical screening criteria do not stipulate a specific threshold for “substantial” reductions in greenhouse gases in comparison with the reference solution. As there are differences in the technologies of the various taxonomy-eligible solutions, we have reviewed each solution separately to determine the point from which greenhouse gas savings can be considered “substantial” in accordance with scientific findings. The requisite life-cycle analyses have been prepared for business-related video conference solutions and for some cloud solutions.

To date, we do not have a life-cycle analysis for the IoT solutions, therefore we do not report them as taxonomy-aligned for the reporting year.

A comparison of in-person meetings with the taxonomy-eligible business-related video conference solutions included in Deutsche Telekom’s analysis provided evidence of significant reductions in greenhouse gases. For instance, hybrid meetings reduce greenhouse gas emissions by around 28 percent (small meetings) or 37 percent (large meetings). Regarding the demonstrated reduction in greenhouse gases, we classify web conferencing solutions as taxonomy-aligned.

Of the workplace and cloud solutions covered by the life-cycle analysis of Deutsche Telekom, Future Cloud Infrastructure reduced greenhouse gas emissions by around 16 percent (in comparison with decentralized data centres operated by customers themselves).

T-Systems Hungary’s (today Telekom Integration Ltd) Cloud-based services (Instant DC, AzureStackHub, Instant Phone) are also offered as an infrastructure as a service model: the customer’s IT systems are integrated on T-Systems operated platforms. Centralizing the service in this way not only reduces the consumption of materials for hardware but, thanks to the highly energy-efficient operation of our data centres, also cuts greenhouse gas emissions. The platforms above are available for Telekom customers as an infrastructure service model. Via a platform operated by T-Systems Hungary, businesses can flexibly purchase computing capacity, memory resources, and network resources, among other things. Improved server utilization and the highly energy-efficient operation of our data centres mean that, according to some analyses in the industry can result 20–30% savings in energy consumption.

This scenario is based on the assumption that customers use their own, decentralized server infrastructure for storing and processing data, rather than the cloud solution. As the basic life-cycle assessments have been evaluated in Germany and have not been compared to the Hungarian workplace and cloud services, we classify them as non-taxonomy-aligned activities.

The Open Telekom Cloud is also offered as an infrastructure as a service model for Magyar Telekom HU customers. According to the life-cycle analysis, using the Open Telekom Cloud or SAP Cloud Services leads to savings in greenhouse gas emissions of 50 percent in comparison with the reference scenario, but until now there were neither revenues, nor expenditures connecting to these activities, therefore they do not appear in the taxonomy-aligned rows.

Currently, IoT solutions in Hungary are in pilot or product development process, and the life cycle analyses of the IoT solutions have not yet been completed, so for the time being we do not report them as taxonomy-aligned services for the reporting year.

For the aforementioned solutions, we exclusively use infrastructure located in Hungary. The requirements for the “Transition to a circular economy” conform to current EU legislation, which we enforce as part of our environment management activities at our sites.

The taxonomy-aligned solutions for GHG emissions reductions represented 0.02 percent of revenue, 0 percent of capital expenditure, and 0.01 percent of operating expenditure.

Transport by motorbikes, passenger cars, and light commercial vehicles (6.5) Additional taxonomy activities (e-mobility)

Magyar Telekom Group has a vehicle fleet that includes both company cars and service vehicles. The economic activity Transport by motorbikes, passenger cars, and light commercial vehicles (6.5) is therefore relevant as a cross-cutting activity with a supporting function for our core business.

As we are pushing forward with the transition to an electric fleet, and as the car industry is also improving, the majority of new vehicles purchased already meet the CO₂ thresholds set in the EU taxonomy. Magyar Telekom and T-Systems Hungary together used more than 400 cars with this feature. We were also able to provide evidence of the alignment of these vehicles with the other key EU taxonomy requirements, which are based on current EU legislation for new vehicles, therefore the related expenditures we classify as taxonomy-aligned, and it covered the total 0.16 percent of the total indirect cost.

A complete overview of the economic activities that are currently part of the EU taxonomy is available using the **EU Taxonomy Compass**.

All activities identified as taxonomy-eligible were checked for their taxonomy alignment. A taxonomy criterion that applies to all activities is the climate risk analysis. This was carried out at Group level by Deutsche Telekom and no significant climate risks were identified in association with the taxonomy-eligible activities. However, the management of climate risks is still under development in Europe as in Hungary and does not yet meet the taxonomy requirements in full.

Deutsche Telekom ensures compliance with minimum social standards for all taxonomy-eligible activities through a Group-wide management system. The standards refer to the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, including the ILO Core Conventions and the International Bill of Human Rights. We perform our human-rights-related due diligence obligations using a risk-based management system encompassing both the Group and our supply chain. We also maintain a process of trust-based dialog with employees’ representatives and trade unions.

The following table provides an overview of our taxonomy-eligible and taxonomy-aligned economic activities for the reporting year. It breaks the figures down into both absolute values and the applicable percentage of Group revenue, capital expenditure, and operating expenditure (indirect cost).

MAGYAR TELEKOM GROUP		REVENUE		CAPITAL EXPENDITURE (CAPEX)		OPERATING EXPENDITURE (INDIRECT COST)	
		Million HUF	%	Million HUF	%	Million HUF	%
RELEVANT TOTAL FIGURES FOR THE GROUP		746 669	100	126 653	100	174 572	100
Of which:	taxonomy-eligible	3 038	0.41	434	0.34	286	0.16
	of which: taxonomy-aligned activities	135	0.02	0	0.00	286	0.16
	6.5 Transport by motorbikes, passenger cars, and light commercial vehicles	0	0.00	0	0.00	275	0.16
	8.2 Data-driven solutions for GHG emissions reductions	135	0.02	0	0.00	10	0.01
of which:	non-taxonomy-aligned activities	2903	0.39	434	0.34	0	0.00
	8.1 Data processing and hosting	327	0.04	400	0.32	0	0.00
	8.2 Data-driven solutions for GHG emissions reductions	2 577	0.35	34	0.03	0	0.00
Of which:	non-taxonomy-eligible activities	743 631	99.59	126 219	99.66	174 286	99.84

The total Group figures used as the basis for calculation in accordance with the EU taxonomy in the reporting year amounted to HUF 746 669 million (revenue), HUF 126 653 million (capital expenditure), and HUF 174 572 million (operating expenditure). The revenue and capital expenditure were determined on the basis of the consolidated financial statements. In line with the EU taxonomy regulations, the disclosures on capital expenditure do not form part of a capital expenditure (capex) plan that is part of a plan to expand taxonomy-eligible economic activities. Operating expenditure relevant to the EU taxonomy represents only a small proportion of total operating expenditure. This includes costs that relate to research and development; building remediation measures; short-term leases; maintenance and repair; and any other direct expenditures relating to the day-to-day maintenance of property, plant and equipment.

As Magyar Telekom's core business is not yet adequately covered by the criteria in the EU taxonomy an aggregate view of the taxonomy eligibility of all economic activities results in 2022 in very low proportions of taxonomy-eligible revenue (0.41 percent), capital expenditure (0.34 percent), and operating expenditure (0.16 percent).

In the 2022 financial year, the taxonomy-aligned proportion of all economic activities of the Magyar Telekom Group was 0.02 percent of revenue, 0 percent of capital expenditure, and 0.16 percent of operating expenditure. The taxonomy-aligned proportion is attributable to economic activities 8.2 Data-driven solutions for GHG emissions reductions and 6.5 Transport by motorbikes, passenger cars, and light commercial vehicles.