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# Climate protection: our path to achieving net zero by 2040

We have set ourselves the goal of becoming one of the leading sustainable telecommunications companies. That is why we are pursuing ambitious, science-based climate targets, which have been confirmed by the Science Based Targets initiative (<u>SBTi</u>). By 2040, we aim for net-zero emissions along our entire value chain. A climate transition plan sets out the path for this and describes the measures we intend to take to achieve this. Our Group-wide climate strategy provides the framework for this.

You can find more detailed information on climate protection in our Sustainability Statement 2024.

## Our climate targets



**2021:** We achieved our goal of sourcing 100 % electricity from renewable sources across the Group (Scope 2, market-based method).



By the end of 2025: We will become climate-neutral in terms of our own emissions (Scopes 1 and 2). To this end, we are reducing emissions from our own operations worldwide by at least 90 % and ideally up to 95 % (compared to 2017). We want to offset the remaining emissions of our  $CO_2e$  footprint through high-quality neutralization measures. These activities bind  $CO_2e$  from the atmosphere, e.g. through reforestation.



**By 2030:** By the end of the decade, we aim to reduce  $CO_2e$  emissions across Scopes 1–3 by 55 % in absolute terms compared to 2020. To achieve this, we are in close dialogue with our suppliers. The aim is to reduce emissions in production and the manufactured products consume less energy in the use phase. This is our interim goal on the way to climate neutrality (net zero) along the entire value chain.



"Net zero" **by 2040:** In around 15 years, we aim to achieve net-zero emissions along the entire value chain – across all three scopes. To achieve this, it is necessary to reduce emissions by at least 90 % compared to 2020. Only up to 10 % may be neutralized via high-quality CO<sub>2</sub>e sequestration projects.

## Climate transition plan – our path to net zero

Our climate transition plan helps us to steer the measures with which we want to achieve our SBTi-validated climate targets by 2030 and 2040 respectively. The basis for this is the calculations of greenhouse gas (GHG) emissions in recent years as well as our short-, medium- and long-term climate targets. The climate transition plan was confirmed at the highest level – by the Board of Management and the Supervisory Board of Deutsche Telekom AG. The chart below illustrates our milestones and levers.

You can find more information about the climate transition plan, climate protection measures and efforts to reduce emissions in our

Sustainability Statement in the Annual Report 2024

#### Climate transition plan for net zero emissions a



- Savings achieved and expected savings: Savings achieved between 2020 and 2024 were 8.2 % for Scope 1 emissions and 99.3 % for Scope 2 emissions. Scope 1 emission savings are expected at approximately 50 kilotons of CO<sub>2</sub>e emissions by 2030. Savings achieved for Scope 3 emissions were approximately 10.7 % between the base year and 2024. We expect general savings of approximately 4,190 kilotons of CO<sub>2</sub>e emissions by 2030.
- Electrification of vehicle fleet & buildings: Electrification and reduction of the vehicle fleet and modernization of buildings and reduction of floor space are key actions for lowering Scope 1 emissions. Using 100 % green energy and increasing the number of electric vehicles helps to reduce emissions. The number of electric vehicles rose by 1,185 in the reporting year. Scope 1 emissions were reduced by 1.4 % year-on-year in the reporting year.
- Decarbonization of the supply chain: In line with our sustainable procurement strategy, a Group-wide task force is leading an initiative to reduce GHG emissions at both the supplier and product level. Our efforts in this regard are guided by our own ambitious climate targets.
- Penewable energy use phase: We expect the share of renewable energy in the countries' electricity mix to increase, which will lead to emissions savings in the use phase.
- Energy savings use phase: In addition to increasing the efficiency of our suppliers' end products, we are also investing in our own product development. Increasing the efficiency of products and solutions in the use phase and hence reducing emissions in the downstream value chain will be key leverage here.
- Logistics actions & others: Optimizing logistics solutions for deliveries to our retail and business customers and extending product life cycles, e.g., by reusing refurbished devices, reduces our Scope 3 emissions. In addition, considering criteria for sustainable sourcing supports the concept of a circular economy, e.g., through reparability.
- Additional actions: Based on the assumptions made in the reporting year, we still have a gap of 4 percentage points to close in order to achieve our 2030 climate target. In addition to the actions already taken, we will need to implement further measures in the coming financial years.
- B CO<sub>2</sub> removal: To achieve our goal of climate neutrality by 2040 (net zero), we will offset up to a maximum of 10 % of our remaining total emissions using high-quality carbon offsets. We use internationally recognized standards (Oxford categories IV/V) for quality assurance.

<sup>a</sup> The figures are based in part on estimates, assumptions, and projections.

<sup>b</sup> The figures for 2020 were adjusted retrospectively in the reporting year due to adjustments to methods and structures applied. Since 2023, CO<sub>2</sub> emissions (Scopes 1 and 2) have also included fugitive emissions from refrigerants and fire suppressants.

The climate transition plan sets out important next steps to continuously reduce our emissions across the entire value chain. On this basis, we can derive necessary measures. This also includes the planning of any investments and budgets that may be required, and we also include target values in other technical and financial planning parameters of the company. The consistent implementation of the necessary measures in the coming years is a common challenge that we must face with all departments involved and in close cooperation with our suppliers.

## Looking ahead

We are approaching the deadline for our next climate target: by the end of 2025, we want to become climate-neutral in our own emissions (Scopes 1 and 2) and reduce our GHG emissions worldwide by at least 90 % compared to 2017, but ideally up to 95 %. We want to offset the remaining emissions of our  $CO_2e$  footprint through high-quality carbon offsets. By the end of 2024, we had already reduced our Scope 1 and 2 emissions by 94 % and thus met our target requirement ahead of schedule. This is mainly due to the global purchase of electricity from renewable energies, significantly improved energy efficiency in our grids, and measures in the building and mobility sectors.

Since 2024, we have also been recording so-called fugitive emissions, e.g. from coolant losses and fire retardant gases, which we had not yet taken into account in 2017 and which lead to an increase in our balance sheet. According to the current state of the projection, we will clearly achieve our target of at least 90 %, even if fugitive emissions are included.

We will provide information on the final status of target achievement as well as on the scope and nature of our neutralization projects as part of our ESG reporting 2025.

#### Scope 1 and 2 emissions

in kt  $CO_2e$ 



<sup>a</sup> Base year 2017 adjusted for the companies that have since been sold and newly added. Due to the relevance of 2017 as the base year, the value was adjusted retrospectively due to methodological changes (cf. b)

<sup>b</sup> The values also include so-called 'fugitive emissions' from refrigerants and fire suppressants. The figure for 2023 was adjusted retrospectively in the reporting year due to adjustments to methods and structures applied. Excluding these fugitive emissions, CO<sub>2</sub> emissions in 2024 would have amounted to 206 kt CO<sub>2</sub>e in 2024 (2023: 217 kt CO<sub>2</sub>e).

<sup>c</sup> Retrospective adjustment of values including fugitive emissions only relevant for the base year 2017, not for the years 2021 and 2022. The ruled bars illustrate the proportion of fugitive emissions in these years.

# **Deep Dive for experts**

## **Relevant standards**

- Global Reporting Initiative (GRI)
  - GRI 305 3–3 (Emissions)
  - GRI 305–1 (Emissions)
  - GRI 305-2 (Emissions)
  - GRI 305–5 (Emissions)

## Scope 1 and 2 emissions

Our Scope 1 emissions are mainly caused by the combustion of fossil fuels, such as fleet fuels, natural gas, and district heating and cooling. In the table below, we go into detail about our Group-wide Scope 2 emissions from our electricity consumption. We differentiate according to the methods "market-based" and "location-based" and thus follow the "GHG Protocol Scope 2 Guidance". Emissions are reported in CO<sub>2</sub> equivalents (CO<sub>2</sub>e).

	2024	2023	2022	2021
Scope 1 and Scope 2 ("market-based") <sup>a</sup>				
Total in million	0.3	0.3	0.2	0.2
t CO <sub>2</sub> e emissions Scope 1	236,355	239,602	212,044	218,971
t CO <sub>2</sub> e emissions Scope 2 ("market-based") <sup>b</sup>	16,212	17,957	21,019	27,290
t CO <sub>2</sub> e emission reduction through additional purchase of electricity from renewable energies (PPA, GOO, RECS)	3,921,533	3,961,608	4,211,894	4,607,367

<sup>a</sup> The figures for 2023 were adjusted retrospectively in the reporting year due to changes in methods and structures applied. Since 2023, CO<sub>2</sub> emissions (Scopes 1 and 2) have also included fugitive emissions from refrigerants and fire suppressants. Excluding these fugitive emissions, CO<sub>2</sub> emissions would have amounted to 206 kt CO<sub>2</sub>e in 2024 (2023: 217 kt CO<sub>2</sub>e).

<sup>b</sup> If no provider factors are available for the market-based method, the country-related residual factor is used (based on the RE-DISS project of the European Commission, which assessed the national share of renewables). If there is no residual factor available either, the IEA factor is used (same as with the location-based method). As a rule, the value of the emission factor in the residual mix is higher than the IEA's country mix factor. Renewable energy certificates are included in all cases.

Data is partly based on estimates, assumptions and projections. Includes offsets from purchased certificates.

	2024	2023	2022	2021
Scope 2 ("location-based")	2021			2021
t CO2e emissions (Scope 2, "location-based")	4,002,218	3,979,565	4,232,913	4,634,657

## CO<sub>2</sub> certificates

To avoid greenhouse gas emissions, we rely on renewable energies, among other things, and reduce our energy consumption, e.g. through more energy-efficient technologies. However, we cannot avoid all GHG emissions in this way. That is why we offset some emissions – including from events in Germany – by investing in certified climate protection projects. The process for offsetting emissions at events is set out in our Event Policy.

The total amount of CO<sub>2</sub> allowances outside our value chain that were verified according to recognized quality standards and cancelled in the reporting period is 35,167 metric tons of CO<sub>2</sub>e. Further information on CO<sub>2</sub> certificates can also be found in our <u>Sustainability Statement</u>.

In t CO <sub>2</sub> e	2024	2023
Removal projects	2,167	2,400
Reduction projects	33,000	15,000
Total	35,167	17,400

In order to achieve our goal of climate neutrality in our own emissions (Scope 1 and 2) by the end of 2025, we are investing in measures to bind CO<sub>2</sub>e emissions. We only consider projects that have a long-term or long-term commitment character and meet at least the quality standards of Oxford categories IV and V. For this purpose, we have carried out a detailed market analysis. We rely on a combination of 'nature-based removals' (nature-based solutions such as reforestation) and 'tech-based removals' (technological approaches to carbon removal, such as biochar). Our goal is to gradually increase the technology-oriented share as the market evolves and new, innovative solutions emerge.

#### Alignment with TCFD recommendations

In 2015, the Task Force on Climate-related Financial Disclosures (TCFD) was established at the Paris Climate Change Conference. Its goal is to develop voluntary and uniform climate-related financial disclosures. In 2017, the TCFD published concrete recommendations for implementation. Companies can use these as a guide to inform investors, lenders, insurers and other stakeholders about the risks of climate change for their business model. In parallel with the recommendations in the area of climate, the final standard of the Taskforce on Nature-related Financial Disclosures (TNFD) was published in 2023. This deals with nature-related opportunities and risks. Details on Deutsche Telekom's commitment to biodiversity can be found here in the CR report under <u>Operational resource protection</u>.

We welcome the goals behind the TCFD and are steadily advancing our TCFD-compliant reporting. The physical risks posed by climate change include extreme weather conditions, which are already becoming increasingly evident today. Transitory risks such as the development of the  $CO_2$  price are also increasingly determining the political discourse. This has a direct impact on our work and our stakeholders. The risks to the continuation of our operations are analyzed by our risk management and operationally managed in the business units. In addition, we are internally evaluating how reporting on climate-related financial risks and opportunities can be aligned with the TCFD's recommendations. This is to be done on the basis of the existing approaches to strategy, controlling and risk management.

# Governance

## Disclosures

a) Describe the board's oversight of climate-related opportunities and risks

#### Input

- Since sustainability and climate change are important topics for Deutsche Telekom, they are managed from the top of the Group: together with the rest of the Board of Management of Deutsche Telekom, our CEO is responsible for climate-related issues for the entire Group. This includes, among other things, our climate strategy, the climate targets and climate-related opportunities and risks.
- The Board of Management of Deutsche Telekom is informed annually about the current status of climate target achievement and company-relevant climate issues. In addition, the climate protection KPI "Energy Intensity" is part of the quarterly reporting to the Executive Board member. Since January 1, 2022, the CEO has been the responsible member of the Executive Board.
- Deutsche Telekom's Risk Management department also reports quarterly to the Audit Committee of the Supervisory Board on ESG risks and opportunities. If unforeseen risks occur outside of regular reporting, they are reported on an ad hoc basis and reported to the Management Board and Supervisory Board. The main risks for the Deutsche Telekom Group are reported in our Annual Report.

For more information, please visit:

- Risk and Opportunity Management System
- ESRS E1–3 Measures and Means in Connection with Climate Strategies

b) Describe the role of management in assessing and managing climate-related opportunities and risks.

The Group Corporate Responsibility (GCR) department is responsible for managing CR and climate-related issues, supported by Group-wide risk management. This also includes the assessment of climate-related opportunities and risks. The Group's business units and segments are responsible for implementing the climate strategy.

For more information, please visit:

- Risk and Opportunity Management System
- ESRS E1-2 Guidelines in Connection with Climate Change Mitigation and Adaptation

## Strategy Disclosures

Input

a) Describe the climate-related opportunities and risks that the organization has identified in the short, medium, and long term.

- A key climate-related risk is the possible failure of the grid infrastructure due to damaged secondary infrastructure (e.g. power outages) or failed cooling systems. Another risk is the possible damage or failure of the grid due to damage to the grid infrastructure itself, which can occur due to extreme weather events or changes in climatic conditions. These risks can cause short-, medium- and long-term damage and also increase insurance premiums. Climate-related physical hazards are expected to increase in the future.
- Financial risks can arise from rising emissions and the associated rising costs for CO<sub>2</sub> compensation, from increased energy consumption or from reputational damage in the event of target misses in the upstream value chain as well as in internal processes.
- The increasing demands of stakeholders, especially investors, NGOs and customers, can offer a strategic opportunity for more environmentally sustainable action. The increasing expectations and demands of these groups are driving us to make our business strategies and -practices more sustainable. It also serves as a motivation to develop innovative and environmentally friendly solutions, which creates financial opportunities. Competitive advantages can also be achieved by positioning itself as a responsible and future-oriented company.

For more information, please visit:

ESRS 2 SBM-3 E1 – Key impacts, risks and opportunities and their interaction with strategy and business model

b) Describe the impact of climate-related opportunities and risks on the organization's operations, strategy, and financial planning. Deutsche Telekom's business activities are highly resilient to climate change. Nevertheless, climate-related opportunities and risks have impacted our business activities in many ways: energy efficiency is of great importance to Deutsche Telekom, as energy consumption in the network has a strong impact on operating costs, but also due to the strategic approach to climate protection and the increasing concerns and expectations of our stakeholders. In Germany and Europe, we have set ourselves the goal of keeping our energy consumption stable until 2027 by further increasing our energy efficiency – despite grid expansion and increasing data volumes. The reduction of energy consumption and Scope 1 and 2 emissions was declared to be a 50 % weighting in each case.

Several programs have been launched to improve energy efficiency at our sites and operations. We examined our value chain for opportunities for greater resource efficiency and CO<sub>2</sub> reduction. In addition, we have identified key areas of action for future measures that should lead to a more sustainable company in general, such as labelling particularly sustainable products.

For more information, please visit:

- Environmentally friendly products and services
- Energy
- Climate protection
- In 2023, we analyzed selected Deutsche Telekom sites in Germany, Hungary, Greece and Croatia with regard to their physical climate risks. The analysis included all data centers as well as critical infrastructure in the fixed network and a sample in the mobile network. In 2024, we expanded this analysis to Austria, Poland, Slovakia, the Czech Republic, and the United States. The analysis thus includes our German and international units, which together accounted for 97 % of our sales in 2023. In this context, locations from the mobile, fixednetwork and data center sectors were included, the functionality of which has a significant impact on our business activities: in total, we analyzed more than 8 thousand locations using the "Climate Change Edition" of Munich Re's "Location Risk Intelligence" software, which is based on the climate scenarios of the Intergovernmental Panel on Climate Change (IPCC). The analysis included nine climate indices. We looked at the risk hazard for the respective sites in two climate scenarios of the IPCC: a business-as-usual scenario (RCP 4.5/ SSP2-4.5), in which the global temperature increase will be above two degrees, and a four-degree scenario (RCP 8.5/ SSP5-8.5). For transitory climate risks, we use the "Net Zero Emissions 2050 Scenario" (NZE), which takes into account a limitation of global warming by 1.5°C by 2050. In addition to the climate scenarios, we also examined the risk hazard in different periods: in the reporting year for the years 2030, 2040 and 2050.

For more information, please visit:

- ESRS 2 SBM-3 E1 Key impacts, risks and opportunities and their interaction with strategy and business model
- ESRS 2 IRO-1 E1 Description of the process for identifying and assessing the material climate-related impacts, risks and opportunities

c) Describe the resilience of the organization's strategy, taking into account various climate-related scenarios, including a scenario of 2°C or lower.

## **Risk management**

climate-related risks.

#### Disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for dealing with

#### Input

When assessing climate risks, we assessed the probability of occurrence and the extent of the risk. We assessed both the physical climate risks and the transitory hazards, taking into account the geographical coordinates of key Deutsche Telekom sites. For the transitory risk assessment, we also analyzed the upstream and downstream value chain. Due to a prioritization of our own business activities, our upstream and downstream supply chain were not included in the physical climate risk analysis for the time being.

For more information, please visit:

- ESRS 2 IRO-1 E1 Description of the process for identifying and assessing the material climate-related impacts, risks and opportunities
- Based on expert knowledge, risks and opportunities are assessed according to their financial impact (on an EBITDA-AL basis) and the probability of their occurrence. If it is not possible to quantify risks and opportunities, qualitative reporting is also possible. Once the risks and opportunities have been identified, they are analysed and assessed in more detail with regard to their probability of occurrence and their potential financial impact, for example with the help of a scenario analysis. We then decide which specific measures need to be taken, for example to reduce risks or seize opportunities. The respective risk owner then implements, monitors and evaluates the measures. If necessary, the steps are repeated and adapted to the latest developments and decisions.

For more information, please visit:

- Risk and Opportunity Management System
- Our processes for identifying and assessing climate-related risks are fully integrated with company-wide multidisciplinary risk identification-, -assessment and management processes. Risks and opportunities (EBITDA impact of more than EUR 100 million) are identified quarterly through a Group-wide risk management process (RMP), which is designed and managed by the Group Risk Governance department. The RMP provides methods and systems for identifying and assessing risks and opportunities. Responsibility for reporting on Group risks and opportunities is distributed among the respective business units, so GCR is responsible for climate risks. Further information on the risk process can be found in our Annual Report.

c) Describe how the processes for identifying, assessing and

managing climate-related risks are integrated into the organisation's risk management.

In addition, the risk department works closely with GCR to identify material climate-related opportunities and risks.

For more information, please visit:

Risk and Opportunity Management System

## Key figures and objectives Disclosures

a) Disclosure of the metrics used by the organization to assess climate-related opportunities and risks in accordance with its strategy and risk management process.

b) Disclosure of greenhouse gas (GHG) emissions (Scope 1, Scope 2 and, if applicable, Scope 3) and associated risks

### Input

- The key metrics for measuring and managing climate-related opportunities and risks are:
- Scope 1 to Scope 3 emissions
- Share of renewable energies
- Energy consumption
- ESG KPI "Energy Intensity"
- Enablement factor
- Waste generation (incl. e-waste)
- Waste Management & Recycling
- Water consumption
- Land
- In addition, we calculate the proportion of our sales related to sustainability and continuously analyze the sustainability benefits of our products.
- Historical key figures of Deutsche Telekom and the national companies are published in the key figures tool of the CR report.

For more information, please visit:

- ESRS E1–5 Energy consumption and energy mix
- ESRS E1-6 Scope 1, 2 and 3 GHG gross emissions and total GHG emissions
- Circular economy
- Operational resource protection
- Environmentally friendly products and services
- Deutsche Telekom discloses Scope 1–3 emissions annually in its annual report.
- We calculate both Scope 1 and 2 emissions as well as Scope 3 emissions on the basis of the GHG Protocol.

For more information, please visit:

Key figures tool

c) Describe the goals used by the organization to manage climate-related opportunities and risks and performance against the goals.

- The two non-financial performance indicators "energy consumption" and "CO<sub>2</sub> emissions" (Scope 1 and 2) have been part of the variable compensation of the Board of Management since 2021 and have also been relevant for our international managers (outside T-Mobile US) and all non-tariff employees of the Group in Germany since 2022. The achievement of responsibilities-related targets for selected relevant functions are part of the performance-based remuneration, as are targets based on the ESG KPI "Sustainable Investment (SRI)" and the target "Listing of the T-share in the sustainable indices/ratings", which reflect the topics of climate change and the CR KPI "Energy Intensity" directly related to them.
- Deutsche Telekom AG's climate targets are published in the <u>CR report</u> and the <u>Annual Report</u>.
- Our energy efficiency targets are disclosed <u>here</u> in the CR report.
- We also publish targets for sustainable procurement <u>here</u> in the CR report.

# Energy: optimizing consumption and increasing efficiency

Artificial intelligence, cryptocurrencies, streaming services – technological development is proceeding at a rapid pace, and with it the energy demand of digital applications is increasing. We are pursuing the goal of keeping our energy consumption stable and increasing energy efficiency despite growing data volumes and grid expansion. In recent years, we have been able to continuously reduce energy intensity – i.e. our energy consumption in relation to the volume of data transmitted. The expansion of renewable energies also plays an important role in more climate-friendly grid operation

We deal in more detail with the topics of energy consumption, mix and efficiency as well as climate protection in our <u>Sustainability</u> <u>Statement 2024</u>. You can also find more information on <u>climate protection</u> here in the CR report.

#### Milestones achieved, ongoing projects and goals

Since 2021, we have been sourcing 100 % of our electricity from renewable energies throughout the Group. To increase energy efficiency and stable energy consumption, we are focusing on modernizing our grid infrastructure, energy-efficient grids and data centers, and purchasing renewable energy directly.

#### Where we come from



#### Where we want to go



In Germany and Europe, we keep our energy consumption stable by further increasing our energy efficiency despite grid expansion and increasing data volumes.

By 2040 at the latest, we want to be climate-neutral ("net zero") along the entire value chain – across Scope 1–3.

#### Grid infrastructure: innovations for energy efficiency



The operation of mobile and fixed network infrastructure in Europe and the USA accounts for the largest share of our energy needs. We want to avoid that the constantly increasing data consumption of users is accompanied by a corresponding increase in energy consumption. That is why we are working to make the use of electricity through our grids more efficient.

In Group-wide innovation projects, we are developing new approaches to our grid operation: for example, we are modernizing the grid infrastructure, focusing on operational energy-saving functions and more energy-efficient technologies. In Europe, for example, we used so-called power-saving features in mobile communications in the reporting year. They automatically switch off certain functions when the grid is under particularly low load, so that energy consumption decreases.

We describe further measures to stabilize energy consumption and increase energy efficiency in the "Deep Dive". Closely linked to our approach to energy-efficient networks are also the topics of "More Sustainable Buildings" and "Raising Awareness among Employees" here in the CR report.

#### ESG KPI "Energy Intensity"

We have been able to steadily reduce energy intensity (i.e. our energy consumption in relation to the volume of data transmitted) in recent years. In the reporting year, energy intensity fell by around 20 %. Investments in modern technology have made this possible as has the shutdown of outdated network technologies. Detailed information on our ESG KPI Energy Intensity can be found in our Sustainability Statement 2024. As an indicator of the increase in efficiency in our data centers, we use the so-called PUE value (Power Usage Effectiveness). Detailed information on this key figure can be found at the bottom of this page.

#### Energy Intensity - Data volume

in kWh/Terabyte



# Expanding renewable energies: electricity supply contracts and large-scale battery storage systems



We are increasingly purchasing electricity directly from renewable sources, acquiring corresponding guarantees of origin or concluding electricity supply contracts with electricity producers, so-called Power Purchase Agreements (PPAs). These supply contracts provide us with long-term price stability. At the same time, we can use PPAs to help drive the expansion of renewable energies and increase their share in the electricity mix.

At the end of 2024, we had already purchased 36.4 % of our electricity Group-wide via PPAs. In Germany and Europe, the figure was 23.8 %. Group-wide, we intend to further increase the share of PPAs in our total electricity consumption in the coming years. We present how the PPA share has developed since 2022 in the "Deep Dive".

In the reporting year, our subsidiary PASM commissioned the first large-scale battery storage systems at the Münster and Bamberg sites. They make it possible to temporarily store large amounts of electricity from renewable energies and use it flexibly. In this way, we can increase the self-consumption of our self-generated electricity and thus increase the share of renewable energies we use. In addition, it contributes to the stability of the power grid.

# 🕭 Emergency power reserve becomes battery storage

° )

Our subsidiary PASM is currently testing the development of a Virtual Power Plant (VPP) in a pilot project. Here, decentralized battery storage systems on mobile phone masts – originally installed as an emergency power reserve in the event of power outages – are intelligently networked in order to bundle them as a virtual large-scale battery storage system.

## USA: diversified energy portfolio

T-Mobile US is pursuing the ambitious goal of reducing energy consumption per petabyte of data by 95 % by 2030 compared to 2019. By the end of 2024, energy consumption had already been reduced by 73 %.

In the U.S., we are diversifying our energy portfolio, which helps insulate the company from potential price fluctuations in the energy market and brings more renewable energy to the electric grid. This is possible through investments, e.g. in medium- to long-term virtual power purchase agreements (VPPAs) with wind and solar projects, long-term solar energy contracts or even shorter-term retail renewable agreements and unbundled RECs (renewable energy certificates).

#### Diversified energy portfolio (T-Mobile US)



## 🐣 T-Systems: strong performance, efficient performance 🥤

T-Systems focuses on the operation of data centers and services for business customers, among other things. Since 2021, our data centers worldwide have been sourcing 100 % of their electricity from renewable energies – either directly, through the conclusion of PPAs, through their own energy generation or by purchasing guarantees of origin. We continuously improve the energy efficiency of our data centers and measure the increase in efficiency via the PUE value (more on the calculation in the Deep Dive). The average global PUE value of our T-Systems data centers was 1.56 in the reporting year. The PUE value for T-Systems' data centers in Germany was 1.53.

#### Energy efficiency of T-Systems data centers

Data centers are becoming more energy-efficient (PUE factor)



Global Germany

For more energy-efficient operation, T-Systems pays attention to the use of energy-efficient server and storage hardware, optimized cooling during the operation of data centers, and automated software features, for example. In the medium and long term, we are pursuing the goal of further developing our cloud applications from an energy efficiency perspective (green coding). T-Systems has been participating in the "EU Code of Conduct on Data Centre Energy Efficiency" since 2014. This is a voluntary code of conduct with the aim of motivating operators and owners of data centers to reduce energy consumption and thus the negative effects on the environment, economy and energy security. At the end of 2024, T-Systems was operating a total of 16 FMO (Future Mode of Operation) twin-core data centers at seven locations in Europe, as well as four local, customer-specific data centers. Since 2024, all nine internal FMO twin-core data centers have been listed in the EU Code of Conduct. In addition, T-Systems joined the Climate Neutral Data Centre Pact (CNDCP) in 2021. We have been a certified member since 2023.

## Looking ahead

In the coming years, we want to further stabilize our energy consumption by continuously increasing our energy efficiency – despite rapidly growing data volumes. An important focus is also on the expansion of renewable energies and large-scale storage solutions.

## **Deep Dive for experts**

#### **Management & Frameworks**

- Deutsche Telekom's subsidiary PASM obtains the energy for the German Telekom Group companies. Its energy management system is certified according to the international standard ISO 50001.
- We have achieved our goal of sourcing 100 % of our electricity requirements from renewable energies throughout the Group by the end of 2021. To emphasize this commitment, we have joined the global RE100 initiative. Its goal is to promote the purchase of electricity from renewable sources.

#### **Relevant standards**

- Global Reporting Initiative (GRI)
  - GRI 302 3–3 (Energy)
  - GRI 302–1 (Energy)
  - GRI 302–2 (Energy)
  - GRI 302–4 (Energy)
  - GRI 305 3–3 (Emissions)
- Task Force on Climate-related Financial Disclosures (TCFD)
  - The most important key figures for measuring and managing climate-related opportunities and risks

#### GSM Association (GSMA) Indicators for Telecom Providers

GSMA-ENV-03 (Energy consumption)

#### Further measures to stabilise energy consumption and increase energy efficiency

- We have already firmly anchored the topic of energy efficiency in the selection of new technologies in the architecture and design phase through specifications and specifications. This applies, for example, to the lighting, monitoring and, above all, cooling of our systems.
- We are consistently pushing ahead with the expansion of photovoltaics at our sites. To achieve more sustainable and efficient energy generation at our sites, we cooperate with various suppliers in the field of renewable energies. At the same time, there is a focus on the use of electricity storage systems and the implementation of intelligent load management. Another example of sustainable innovations is the use of waste heat from our ICT network nodes (information and telecommunications technology). The thermal energy is used specifically to heat a building complex, which both reduces energy consumption and improves the CO<sub>2</sub> balance.

## ESG KPI "PUE"

We are continuously improving the energy efficiency in our data centers <sup>a</sup> with various measures. One indicator of the increase in efficiency of our data centers is the "Power Usage Effectiveness (PUE)" value, which we determine according to the method of the data center standard EN 50600. The PUE value results from the ratio between the total electrical energy consumed by the data center and the electrical energy consumption of the IT.

<sup>&</sup>lt;sup>a</sup> Operation and use as multi-customer and multi-platform data centers.



<sup>b</sup> International + DT Group in Germany

## ESG KPI "Renewable Energies"

• We use the "Renewable Energies" ESG KPI to measure our progress. In addition, we have developed Group-wide parameters that we use to evaluate electricity purchases in all national companies with regard to sustainability aspects.

	2024			2023		2022			2021			
	Da	EU <sup>b</sup>	Group	D <sup>a</sup>	EU <sup>b</sup>	Group	Da	EU <sup>b</sup>	Group	Da	EU <sup>b</sup>	Group
Electricity from renewable energy (in GWh)	1,882	1,564	11,053	1,911	1,540	11,316	2,265	1,576	12,252	2,510	1,845	12,270
Total electricity consumption (in GWh)	1,882	1,564	11,053	1,911	1,540	11,316	2,265	1,576	12,252	2,506	1,845	12,270
Renewable Energy (ESG KPI)	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Certificates	70 %	66 %	44 %	74 %	68 % <sup>e</sup>	46 %	53 %	63 %	50 %	36 %	82 %	53 %
Power Purchase Agreements <sup>c</sup>	30 %	17 %	36 %	26 %	5 % <sup>e</sup>	32 %	23 %	0 %	28 %	5%	0 %	23 %
Direct purchase <sup>d</sup>	0 %	17 %	19 %	0 %	26 % <sup>e</sup>	21 %	23 %	22 %	23 %	59 %	18 %	24 %
Self-generation <sup>c</sup>	-	-	-	0.18 %	0 % <sup>e</sup>	0.05 %	0.1 %	0 %	0.04 %	0.1 %	0 %	0.04%

<sup>a</sup> Until 2022: D = DT Group in Germany, since 2023 Germany segment is depicted.

<sup>b</sup> Until 2022: EU = National companies in Europe excluding Germany and T-Systems, since 2023 Europe segment is depicted.

<sup>c</sup> From 2024, the share of self-generation is no longer shown separately. Instead, it is included in the share of power purchase agreements.

<sup>d</sup> After the transition to 100 % electricity from renewables, no remaining country mix is shown, as a complete transition to electricity from renewables has taken place.

 $^{\rm e}\,$  Value has been corrected compared to the publication in the previous year.

• Even though we prefer to cover our electricity consumption through PPAs, our own energy generation and direct purchases, we still have to resort to guarantees of origin due to limited capacities.

# Renewable Energy in the Group





<sup>a</sup> Until 2021, the sourcing of renewable energy from power mix was used. For 2021, the "residual mix" is only relevant for the Deutsche Telekom in Germany. Here, the EEG surcharge paid was taken into account when calculating the share of renewable energy.

<sup>b</sup> Starting from 2023, including consumption in the fleet area.

# Circular economy: holistic approach along the entire value chain

62 million tons of e-waste were produced worldwide in 2022 across all industries a – enough to fill 1.55 million 40-ton trucks. This shows that we are too wasteful with our planet's raw materials. That is why we at Deutsche Telekom have set ourselves an ambitious goal in Europe by 2030: We want to ensure that all IT/network technology used by Deutsche Telekom and a large proportion of the end devices put into circulation are recyclable. To achieve this goal, we look at the entire life cycle from product development to disposal.

We also deal with the topic of circular economy in detail in our <u>Sustainability Statement 2024</u>.

# Milestones achieved, ongoing projects and goals

For more than 20 years, we have been dealing with the question of how we can recover the valuable resources from end devices and network technology and avoid electronic waste. Today, we take a holistic approach to the circular economy along our entire value chain.

## Where we come from

2003	Together with Deutsche Umwelthilfe, we are launching a mobile phone take-back system to support environmental and nature conservation projects.
2007	For the first time, 100,000 mobile phones are taken back in a single year.
2010	ESG KPI Take-Back Mobile Devices is established.
2013	We adopt an " <u>International Waste Management Framework</u> " that sets out Group-wide principles for waste management (excluding T-Mobile US).
2016	We introduce a Group-wide guideline with requirements for the recycling of copper cables.
2017	We commission packaging machines that can provide just the right size of packaging for a product to avoid oversized packaging.
2021	With the ESG KPI "Sustainable Product Packaging", we are showing the proportion of sustainable packaging in Telekom-branded products for the first time.
2022	We are achieving our Europe-wide "Zero Waste to Landfill" goal. This means that we dispose of or recycle 100 % of electrical waste properly, preventing it from ending up in landfill.
2022	All new Telekom products (with T-Brand) in Europe are sustainably packaged in accordance with the requirements of our Packaging Directive.

<sup>a</sup> "E-Waste Monitor 2024" of the United Nations.

## Where we stand in the reporting year



The entire IT/network technology used by Deutsche Telekom and a large proportion of the end devices put into circulation are recyclable.

## Our approach: measuring circular economy performance holistically

By 2030, the entire IT/network technology we use and a large proportion of the end devices in circulation are to be recyclable. This includes the entire network technology, a large part of our own products (with T-Brand) and a large part of the mobile devices we sell.

To this end, we are implementing comprehensive measures along our entire value chain. We divide these into four dimensions: "avoidance", "preparation for reuse", "collection and recycling" and "disposal".

## Our most important levers

# $\mathcal{O}$

2030

#### Avoidance:

even during product design, we pay attention to the selection of materials, recyclability, packaging and shipping options in order to conserve resources.



# Preparation for reuse:

we refurbish used end devices and network technology to enable them to be used again.



#### Collection and recycling:

we collect devices that are no longer in use and recycle them professionally. Net technology is also recycled.

# $\bigcirc$

#### Disposal:

we operate a systematic waste management system to avoid waste and recycle waste wherever possible.

ge our progress. rk technology used by Deutsche Telekom a clable.

## Making progress measurable: the Telekom Circularity Score

From 2025 onwards, we want to make our holistic circular economy approach measurable throughout Europe through an overarching set of KPIs: the Telekom Circularity Score (TCS). It is to be introduced successively and help us to steer our measures and measure progress transparently. In doing so, it takes into account the specific requirements of the ICT industry.

In addition to KPIs that have been established over many years, the TCS will contain new metrics that we will test and gradually introduce. It is planned that the TCS will also include a specific KPI for the circular material use rate for net technology, which will take into account the proportion of reused or refurbished net technology as well as the proportion of circular materials in new procurements. This allows us to measure our progress in resource-saving grid expansion.

An important part of our approach is also to support our suppliers in reducing plastic, paper and packaging as well as in the use of recycled materials.

In addition, we implement measures at our workplaces - for example in office buildings, Telekom shops or data centers. In Germany, for example, 100 % of workplace devices (laptops, monitors, etc.) are collected after their useful life, refurbished and returned to the cycle as used devices.

#### **Deutsche Telekom Circularity Score**



#### Avoidance: from product development to packaging

When designing our products, we attach particular importance to sustainable features. Our holistic approach includes our telecommunications services, the corresponding end devices including plastic-free packaging, and low-CO<sub>2</sub> shipping to customers. Our product developers are subject to the "Sustainability by Design" guidelines, which include specifications on device development, packaging, and safe ingredients. Detailed information on how we design environmentally friendly products can be found here in the report under Environmentally friendly products and services.

We have set out our requirements for packaging in a packaging guideline. Since 2022, all new Telekom products (with T-brand) in Germany and Europe have been sustainably packaged: We use recyclable and biodegradable materials, recycled paper and non-toxic labels. In addition, we do not use single-use plastic at all.

By consistently applying the Packaging Directive, we were able to increase the share of sustainably packaged fixed-line devices to 99 % Group-wide in 2024 b.

<sup>&</sup>lt;sup>b</sup> We will continue to sell products that were new to the market before 2022. Therefore, the share of sustainable packaging has been approaching the 100% mark for several years, but has not yet fully reached it.

#### Sustainably packaged products



#### Sustainably packaged

Not sustainably packaged



We also actively hold our suppliers accountable: the packaging of smartphones that we purchase from them must comply with the requirements of our packaging policy. We monitor compliance through regular factory audits. In the reporting year, we were not aware of any violations of the Packaging Directive by suppliers.

We also want to optimize our shipping packaging. Since 2021, we have been doing without wrapping plastic in technical logistics in Germany: we need about 4,700 kilograms less plastic per year. In addition, since 2020, we have been saving 50 tons of additional paper annually as filling material through a cardboard scrap/shredding machine.

## 🐣 From old to new: prototype of the NeoCircuit router 🦵

In cooperation with an industry consortium consisting of Citronics, Evonik, Fairphone, Infineon, MaxLinear, Sagemcom and the INC Innovation Center, we have developed an innovative approach to use electronic components from old devices for the production of new devices. The first prototype, the NeoCircuit router, is already fully functional.



For the router, central electronic components such as the motherboard, processor and memory chips from old smartphones such as the Fairphone 2, DSL and USB plugs as well as cables and power plugs are recycled. In the first expansion stage, the prototype achieves a degree of circularity of about 70 % of the electronics, thus reducing the CO<sub>2</sub> footprint by about 50 %. The housing is also made of 100 % recycled plastic.

## Preparation for reuse: new life thanks to reprocessing

Not all devices that are replaced with a new model have already reached the end of their service life – this applies to end devices such as smartphones as well as to network technology. We want to give these devices a new life and are implementing various measures to achieve this. Among other things, we sell "refurbished", i.e. refurbished mobile phones, offer rental models for fixed-line devices and sell used network technology on our own online marketplace.

## Mobile phones: "refurbished" is in demand

For mobile phones, we work with buy-back and refurbishment service providers to take back, refurbish and refurbish devices. In Germany and Austria, we offer refurbished mobile phones that are marked with our <u>#GreenMagenta label</u>. Our customers can also buy used smartphones and other devices in several national companies, for example in Greece, Croatia, Poland and Hungary. In Greece, the OTE Group has set up a process for the refurbishment of communication terminal equipment (e.g. routers, network sockets and TV receivers). With an annual capacity of over 270,000 devices, this project meets the growing demand for used equipment. In Hungary, almost 300 refurbished mobile phones are sold every week.

#### Landline devices: renting instead of buying

For fixed-network terminals, all European national companies mainly offer rental models so that they can be reused or professionally recycled after replacement.

#### Our progress in 2024 in Germany

- Around 1.35 million customer devices such as routers and TV set-top boxes have been refurbished for reuse in Germany.
- Around 1.05 million refurbished fixed-line devices sold or rented, of which 390,000 were offered as service replacement devices
- Approximately 630,000 non-reusable devices professionally recycled.

#### A trading platform for discarded network technology

In Germany, we have pushed ahead with the conversion of the mobile network from 4G to 5G in recent years. This results in discarded technology, which we sell on the "Marketplace Alttechnik". It is marketed worldwide through a partner. The primary goal is to continue using the old technology. If the technology is damaged or does not find buyers after two years, it is recycled. In 2024, 314 tons of old technology were sold in this way, twice as much as in the previous year. 215 tons were recycled and a further 183 tons were in stock at the end of the year. In order to promote the reuse of technology within Deutsche Telekom, we are planning to introduce a cross-border internal platform.

# 🕭 T-Systems: resource-saving data center operation 🧲

T-Systems actively contributes to Deutsche Telekom's circular economy goals. T-Systems' internal guideline "Environmental Sustainable Design Principles" serves as a guideline: for example, it specifies high hardware utilization in data centers in order to reduce the overall hardware requirement. We also operate an internal hardware exchange platform for hardware components from data centers. Another example is the reuse of existing hardware and software.

## Collection & Recycling: take-back in shops and via collection campaigns

Many drawers contain discarded or defective mobile phones, in Germany alone there are estimated to be around 200 million devices. They contain valuable raw materials such as gold, silver, copper, platinum or palladium. The take-back of equipment that is no longer needed is therefore one of the central measures when it comes to our contribution to the circular economy.

We want to create incentives to hand in discarded mobile phones so that they can be recycled properly and valuable raw materials can be recovered. In 2024, we set up new, specially designed collection boxes in our shops to make it as easy as possible for our customers to return their old devices.

In addition, we have been running regular mobile phone collection campaigns for many years. For example, in 2024 we launched a joint collection campaign with the German Football Association (DFB) for the European Football Championship. For each mobile phone collected, 50 cents were donated to "HateAid".

Each collected device is first checked to see whether it can still be used or recycled. Only devices that are not suitable for a "second life" are recycled.



## ESG KPI "Take-back of mobile devices" (including mobile phones)

In 2024, more than 9 million mobile phones were taken back c across the Group. The ESG KPI "Take-back of mobile devices" relates the "number of mobile devices taken back" to the "number of devices put into circulation". In 2024, the share was 29.4 %.

#### ESG KPI "Take Back Mobile Devices"

(and Take Back Mobile Phones from 2021) in %



<sup>a</sup> From 2021, differentiated data collection for mobile phones; other mobile devices may also be included, as separate disposal and collection in the recycling process is not vet possible in some cases.

<sup>b</sup> Since 2023, the Group value includes Germany, Europe and US segment. The increase is due in particular to the systematic exclusion of non-mobile devices (accessories) for the segment Germany and T-Mobile US and a general improvement in data quality, especially due to the inclusion of buyback programs.



# Take Back Mobile Devices

Since 2023, data quality has improved as non-mobile devices (accessories) have been specifically excluded for the segment Germany and T-Mobile US.

## **Current International Collection Projects**

- In Germany, we operate the mobile phone collection center in cooperation with Foxway to collect used mobile phones. In 2024, we were able to collect over 110,000 old devices via the take-back system, which has been awarded the state "Blue Angel" ecolabel. For every device returned, we donate money to local environmental and social projects. We also offer our customers the opportunity to sell used devices via our "mobile phone purchase" to our partner Assurant, who uses them for refurbishment.
- In Poland, T-Mobile Polska launched the initiative "Działamy w trosce o nature" ("We act with respect for nature") in 2024. Over 2 tons of discarded smartphones were collected through a nationwide school competition, which corresponds to about 15,000 devices. A Christmas campaign encouraged customers to recycle their old mobile phones.
- In Hungary, Magyar Telekom and Hello Nonprofit have launched a competition for Hungarian non-profit organizations in 2024. The jury chose the program "Passzold Vissza Tesó!" ("Give it back, brother"), which has been collecting unused cell phones, GPS devices, tablets and accessories since 2018. Since the beginning of the program, the organization has collected 14,000–18,000 devices annually, a total of 8 tons of e-waste.
- In Croatia, Hrvatski Telekom operates the communication platform "Poziv koji ne propuštaš" ("The call you have to answer"). Customers are called upon to hand in their devices to Telekom shops throughout Croatia. In 2024, almost 30,000 smartphones could be taken back.

<sup>&</sup>lt;sup>c</sup> The returned end devices are recorded in kilograms or by the number of pieces. The survey in kilograms is based on a Group-wide conversion factor of 7.25 pieces per kilogram, unless a country-specific conversion factor is available. The mobile devices launched on the market include smartphones including chargers, simple phones, tablets, mobile landline devices and wearables - electronic devices that can be worn on the body as an accessory. For reasons of data guality, guantities from purchasing are reported.

## ESG KPI "Redemption CPEs" (fixed network)

We also take back modems, routers, repeaters and TV receivers (so-called Customer Premises Equipment, CPEs). Since 2021, we have been recording the ESG KPI "Take-back CPEs" and the number of refurbished CPEs. In 2024, more than 4.6 million CPEs were taken back across the Group, 44 % of which were refurbished.

Our goal is to further optimize the process of take-back and reprocessing. In this way, we want to ensure that all returned CPEs are either refurbished, stored for future refurbishment or recycled. The implementation of corresponding measures has already begun.

#### ESG KPI "Take Back CPEs"



All business units in which basic data was available for the KPI calculation are taken into account. Group value therefore without T-Systems and DTSE units.

#### Reclaimed copper cables

For decades, telephone lines consisted largely of copper cables, which are now being successively replaced by fiber optic expansion. In 2024, we pulled over 1,430 tons of copper cable from cable duct systems in Germany or recovered them from assembly and cable residues. Certified waste management companies process them in an environmentally friendly manner. Up to 90 % of the material is then returned to the raw material market.

#### Copper cable recovered since 2018



in thousand tons

## **Disposal: avoiding waste**

We want to avoid waste as much as possible and recycle any waste that accumulates.

As part of our European resource efficiency strategy, in 2021 we set the Europe-wide goal of "Zero Waste to Landfill": This means that we dispose of or recycle 100 % of electronic waste properly, preventing it from ending up in landfill. We were already able to achieve this goal at the end of 2022.

In order to ensure controlled handling of electronic waste, we pursue various approaches. The waste pyramid provides us with the methodological framework: waste prevention comes first, followed by reuse, recycling and other recovery (e.g. energetic) so that in the end only those materials remain for disposal that cannot be treated at the other levels of the pyramid.

Our waste management is uniformly defined throughout the Group (excluding T-Mobile US) in accordance with the "International Framework for Waste Management". On this basis, the national companies are responsible for setting measurable goals and monitoring their implementation. This enables them to respond flexibly to country- and company-specific conditions.



## Looking ahead

To make our devices and technologies circular by 2030, we need to look at our entire value chain. That is why our focus in 2025 will be primarily on the introduction of our Telekom Circularity Score. In this way, we create the basis for measuring our progress at the various stages of the value chain and managing our measures holistically.

## **Deep Dive for experts**

#### Management & Frameworks

With our management system for health, occupational health and safety and environmental protection, we are committed to continuous improvement. It has been recertified according to international standards such as ISO 14001. Our environmental guideline summarizes key ecological commitments, e.g. on the circular economy and biodiversity.

The Sustainability Statement in the Annual Report 2024 provides further information on the topics of circular economy and waste management.

#### **Relevant standards**

- Global Reporting Initiative (GRI)
- GRI 301–3 (Materials)
- GRI 306 3–3 (Waste)
- GRI 306–1 (Waste)
- GRI 306-2 (Waste)
- GRI 306–3 (Waste)
- GRI 306-4 (Waste)
- GRI 306–5 (Waste)
- Sustainability Accounting Standards Board (SASB)
- TC-TL-440a.1 (Management of products at the end of their useful life)
- GSM Association (GSMA) Indicators for Telecom Providers
- GSMA-ENV-04 (Circularity)
- GSMA-ENV-05 (Waste)

## Waste management and recycling

We are constantly developing our Group-wide set of key performance indicators for waste management and, in addition to the amount of waste generated, we also collect figures on the recycling of technical and hazardous waste.



Waste management and recycling <sup>a</sup>

<sup>a</sup> Excluding T-Mobile US.

<sup>b</sup> Excluding residual waste, paper waste and other waste.

#### Waste generation (including e-waste)

As part of our waste management, we transparently map our waste volume. In 2021, we expanded our set of key figures on technical waste so that for the first time it is possible to differentiate between electronic waste (e-waste), cable waste and other technical waste. We have not set a Group-wide target for the reduction of hazardous and non-hazardous waste. Rather, the national companies are guided by our "International Framework for Waste Management" adopted in 2013; on this basis, they develop or update their own waste strategies. To this end, they have also set themselves corresponding goals: the focus is on reducing hazardous waste - such as lead batteries. The Group-wide amount of waste fell by 18 % compared to 2023. In our interactive key figure tool for company comparison, we provide detailed information on the key figures of the individual companies.

#### Waste generation Deutsche Telekom Group



Data is partly based on estimates, assumptions and projections. Data is partly provided by external service providers.

## Waste generation 2024 Deutsche Telekom Group



Data is partly based on estimates, assumptions and projections. Data is partly provided by external service providers.

# Environmentally friendly products and services: an overview of the entire life cycle

How can we make our products more sustainable – and help minimize negative environmental impacts throughout their life cycle? And what products and services can we use to achieve a positive environmental impact? These questions occupy us continuously. The focus is on resource conservation, energy efficiency and emission reduction.

We also deal with this topic in detail in our Sustainability Statement 2024.

#### Milestones achieved, ongoing projects and goals

For a decade, we have been analyzing the environmental impact of our product portfolio. In this way, we identify the levers to make our products and services more sustainable. With our measures, we start with the development.



## Sustainability starts with product design

We want to offer our customers more and more products and services that have ecological or social benefits. We start with product development and look at the effects throughout the entire life cycle. Our product developers follow our "Sustainability by Design Guidelines". In this way, we provide them with concrete guidelines, for example on aspects such as "Sustainable Packaging", "Hazardous Ingredients" and "Sustainable Device Development". We are also working with various partners to make the increasing use of streaming services more energy-efficient. In the reporting year, we therefore published a <u>guide</u> to help decision-makers, development teams and consumers assess the energy needs of video streaming and promote more sustainable criteria.

#### Our principles for more sustainable AI development



Applications based on artificial intelligence (AI) have a particularly high energy and resource requirement. To promote the resource- and energy-efficient development and use of AI, we introduced <u>nine principles for "green AI"</u> in 2024. In doing so, we not only want to make the development and use of AI within Deutsche Telekom more sustainable, but also provide impetus in the ICT industry. Our principles for green AI, for example, stipulate that AI models should be used multiple times and that programs should be written in a resource-saving manner. Because AI – used responsibly – also makes a positive contribution to climate protection: For example, we use AI in our data centers and networks to increase energy efficiency.

## Ecologically sustainable products clearly labelled

The basis of our solutions is Deutsche Telekom's "green

network", which has been operated 100 % with electricity from renewable energies throughout the Group since 2021. In addition, we offer hardware, services and digital solutions that offer an environmental advantage.



We determine what these are using an IT-supported impact measurement process. The process and methodology were validated by TÜV Rheinland in 2023 and confirmed in 2024. Detailed information on this can be found here in the CR report under Impact Measurement.

If our analyses show that a product or service has a significant positive ecological impact, we award it with our #GreenMagenta label. Here are some recent examples of our solutions that have received the #GreenMagenta label in 2024:

- T Phone: in 2024, we released the new T Phone 2 and T Phone 2 Pro devices (REVVL 7 5G and REVVL 7 Pro 5G in the USA). They are produced with less emissions than the previous models and their packaging is characterized by increased recyclability.
- Magenta TV Stick: the housing of the Magenta TV Stick is now made of 95 % recycled material from electronics and household appliances.
- Halfsize SIM cards: in Austria and Germany, there are half-size SIM cards made of recycled plastic. Due to the more compact design, we reduce the use of materials. Switching to recycled plastic saves up to 900 kg of CO<sub>2</sub>e per 100,000 SIM cards.
- Take-back process: we take back and refurbish used equipment in many countries in Germany, Croatia and North Macedonia, this take-back process carries our #GreenMagenta label.
- Business customer solutions: more than 20 of our solutions for business customers are also marked with the #GreenMagenta label,
   e.g. IntraSelect SD-WAN for energy-efficient network management or our Purchase portal for mobile phones, smartphones and tablets.

You can find an overview of all our products with the #GreenMagenta label on our website.

#### IT solutions for environmental protection

Our portfolio includes solutions for information and communication technology (ICT) that can contribute to the reduction of environmental pollution and thus also to the preservation of biodiversity.

Creation

As the groundwater level is falling in large parts of Europe, endangering habitats for many creatures, countermeasures are becoming increasingly urgent. T-Systems offers a solution for digital water management. The meters transmit water data automatically – thanks to Internet of Things (IOT) technology. The intelligently controlled water withdrawal helps to monitor and protect groundwater levels.

Another concern is the protection of bees: we have developed hives with smart sensors that can be monitored remotely and collect and transmit data such as temperature, humidity and sounds. This allows bee colonies to be cared for in a very targeted manner and unnecessary, disturbing trips to the insects to be avoided.

## 🕭 X-Creation – Driving Innovation and Business Value Through Collaboration 🥤

To enhance the sustainability of our products and services, we actively engage in collaborative innovation initiatives, such as T-Systems' X-Creation program. In 2024, approximately 1,000 partners, customers, and experts from over 140 partner organizations and Deutsche Telekom joined forces to drive impactful innovation.

X-Creation is a curated thriving innovation community where members collaborate to accelerate the development of solutions with meaningful societal and environmental impact. Following its initial success in 2024 – an AI-powered app to combat disinformation on social media – X-Creation focused on advancing further products and services that contribute to sustainability and social progress throughout the reporting year.

The format successfully developed and delivered more than 18 solutions, addressing key challenges in misinformation & disinformation, economic uncertainty, extreme weather events, interstate armed conflicts and social polarization. Additionally, two start-ups promoting environmentally friendly technologies were founded, and the UNFCCC Secretariat (United Nations Framework Convention on Climate Change) became an official partner of the program.

We are continuing X-Creation 2025 and want to continue to promote sustainable transformation – through innovation and collaboration.

## Measuring progress on more sustainable products

We use various key figures to measure our progress in expanding our more sustainable product portfolio. For example, we record the number of sustainable and refurbished mobile and fixed-line devices.

#### Number of more sustainable devices



We also calculate the ratio of the number of more sustainable products to the total number of devices sold and rented: in 2024, this share was more than 73 % of our fixed-network devices sold and rented across the Group (excluding T-Mobile US). In addition, we collect key figures on the take-back of equipment for recycling purposes and on sustainably packaged products (see <u>Circular</u> <u>economy</u>).

#### Share of More Sustainable and Refurbished Products



## Enablement factor: how much CO<sub>2</sub> can our customers save?

ICT solutions can help our customers reduce greenhouse gas emissions. For example, video conferencing can save on commuting to work and business trips. Every year, we calculate the climate protection impact of our solutions on the customer side. To this end, we have been determining the enablement factor since 2014, which compares the  $CO_2$  savings potential of our customers to Deutsche Telekom's  $CO_2$  footprint (Scope 1 to 3).

In 2024, we calculated an enablement factor of 4.41 for Germany. This means that customers were able to save more than four times as much  $CO_2$  when using our solutions in the reporting year as Deutsche Telekom itself consumed this year. So if we emitted one ton of  $CO_2$  in Germany, we were able to save up to 4.41 tons of  $CO_2$  by using our products and solutions.

A large part of the savings for our customers in Germany comes from:

- Home office and our web and video conferencing solutions,
- Cloud Computing, as well as
- more powerful servers, more energy-efficient data centers, and higher infrastructure utilization.

For even more transparency and comparability, we are supporting the European Green Digital Coalition (EGDC) in developing an industry standard for calculating emission savings from ICT products.

#### ESG KPI "Enablement Factor" a DT Group in Germany

The positive  $CO_2$  effects made possible by the use of our products and solutions on the customer side amounted to a total of 17.38 million tonnes in Germany in the reporting year. This equates to an enablement factor of 4.41. Even though the positive  $CO_2$  effects have thus increased compared to the previous year, the enablement factor has fallen slightly. This is due to the fact that our Scope 3 emissions in Germany increased in the reporting year. <sup>b</sup>

#### Enablement factor

DT Group in Germany, 2024



Data is partly based on estimates, assumptions and projections.

 $^{\rm a}\,$  For the year 2024, the enablement factor for Europe has not been determined.

<sup>b</sup> The increase in Scope 3 emissions is due to our strong customer growth in streaming and mobile services, as well as increased fiber expansion.

#### Enablement factor from 2021 to 2024



# Extract: positive $\mbox{CO}_2$ effects facilitated for our customers

in kt CO<sub>2</sub>e



## Involving suppliers in climate protection

We involve our suppliers intensively in climate protection. The "Supplier Engagement Rating" of the non-profit organization CDP evaluates companies according to how actively they work with their suppliers on climate protection. In 2024, CDP once again included us in the "Climate Leader A List" and on the "Supplier Engagement Leader Board". This was helped by the fact that we calculated supplier-specific emission intensities based on the responses of our suppliers in the CDP Supply Chain Program: to do this, we compared the total emissions of suppliers to their sales. The ESG KPI "CDP Supply Chain Program" shows how much of our purchasing volume from emission-intensive suppliers is covered by the CDP Supply Chain Program. In 2024, this was around 46 %.



## CDP Supply Chain Programm

<sup>a</sup> Excluding T-Mobile US.

## Looking ahead

For 10 years, we have been systematically analyzing the sustainability of our product portfolio. In 2025, our focus will be on further developing our key performance indicator systems for the circular economy and product-related greenhouse gas emissions, thus making our progress even more measurable and controllable. Providing impetus for more sustainable AI development also plays an important role for us.

# **Deep Dive for experts**

## **Management & Frameworks**

- In addition to the "Sustainability by Design Guidelines" for product developers, there are supplementary guidelines such as the "Environmental Sustainability Design Principles" at T-Systems. The "Green AI Principles" are also taken into account there.
- Our nine principles for "green AI" provide guidance on how AI solutions can be developed and used in an ecologically sustainable way. They show a way in which we can counter risks such as a significantly increasing CO<sub>2</sub> footprint at an early stage.
- Our packaging policy is part of the "Standard Design Specifications", which also include sustainable requirements for product components and design. All manufacturers must meet these criteria when developing telecom devices.

## Sustainable product portfolio

Since 2014, we have been assessing the sustainability of our products using our own analysis method. This method examines, among other things, safety and recyclability. A product is only assigned to the sustainable product portfolio if it offers at least one sustainability benefit and is highly likely to have none of the defined risks. Detailed information on the methodology can be found on the page "Analysis of the sustainability benefits of our products continued".

## Analysis of the sustainability benefits of our products continued

So far, there is no industry-wide established system that provides sustainability information on ICT products and services. At Deutsche Telekom, we have been evaluating the sustainability of our products since 2014 using our own analysis method. For example, we examine how safe the products are or how well they can be recycled.

We inform our customers about the contributions our products make to sustainability. Our analysis results also enable us to position ourselves as a responsible company vis-à-vis the competition. In the reporting year, we also included selected products in the analysis in line with the criteria of the EU taxonomy.

#### Mapping to the SDGs

In the reporting year, we once again compared the sustainability benefits of a number of our products with the goals of the Sustainable Development Goals (SDGs), supported by internal experts. The level of detail we have taken depends on how much revenue we generate with the product under investigation: in the case of high sales, we looked at the impact on all SDGs, in the case of low sales, only the impact on the most relevant SDG.

#### Results of the analysis

In the 2024 reporting year, we examined 37 products and solutions in detail, analyzing their contribution to sustainability and their business potential (as of the end of 2024).

Sustainable products are an important competitive factor for us. With the help of the ESG KPI "Share of sustainability-related sales", we determine how much revenue we generate (excluding T-Mobile US) with products that make a contribution to sustainability. The determination of sales for individual product clusters is partly based on assumption-based keying. In 2024, the share was 43 % (previous year: 43 %).

#### Share of revenue with products and services that offer sustainability benefits DT 2024

DTAG excl. US



## Share of revenue with products and services that offer sustainability benefits DT

in %







<sup>a</sup> 37 products and solutions have been evaluated in total.

#### Estimated influence division of our products' sustainability benefits on the Sustainable Development Goals



We have been recording this key figure since 2014 using our own methodology, which we adapted in 2022. The fact remains that a product can only be assigned to the sustainable product portfolio if it is highly likely to contain none of the seven risks defined by us. The risk analysis covers the following issues: environmental pollution in the manufacture of ICT products, avoidable, non-recyclable electronic waste, ethically unacceptable working conditions, use of conflict minerals in the production phase, social exclusion as well as radiation and health effects and information security. In addition, a product must offer at least one of five sustainability benefits. Reduced energy consumption, reduction of CO<sub>2</sub> emissions, approaches to the circular economy, reduction of time and facilitation of social participation are considered. Saving costs is still seen as additional information. However, a cost advantage alone does not constitute a sustainability advantage. In line with the EU taxonomy, since 2023 we have included revenue from the rental of terminal equipment in the fixed-network sector, which accounts for around 2 percentage points of the total value. When crediting the included mobile broadband revenues, data and voice revenues are difficult to separate and the crediting is based on assumptions. In the reporting year, we will continue to report on these KPIs in parallel with the EU Taxonomy Regulation, as this does not yet cover the essential part of our business model.

#### Assessment of Deutsche Telekom's sustainability portfolio

One of the four pillars of Deutsche Telekom's (DT) integrated climate strategy is to increase the share of sustainable products and services in our product portfolio.

A product can only be assigned to the sustainable product portfolio if it is highly likely to contain none of the seven risks we have defined. In addition, a product must offer at least one of five sustainability benefits. Saving costs is still seen as additional information. However, a cost advantage alone does not constitute a sustainability advantage.

#### **Overview:**

Financial basis for calculation Fiscal year 2024, excluding the United States

## Criteria for scope of assessment In the scope of assessment Region

Europe

#### Services

- Market-oriented core products for B2C and B2B (including B2G)
  - Broadband for fixed, mobile and wholesale
  - TV
  - Value-added services
- Market-oriented non-core products for B2C and B2B, e.g. hosting services
- Enterprise solutions for B2B (including B2G)

#### Physical products

- ICT infrastructures, such as data centers
- Rented devices, such as routers

## Criteria for scope of assessment Outside the scope of assessment Region

United States

## Services

- Internal services, e.g. consulting, facility management or transactions with national subsidiaries
- Financial assets

#### **Physical products**

 Physical facilities needed to perform business functions, such as buildings



#### **Risk and Benefit Filter**

#### Overview of risk filters for sustainability-driven portfolio screening

DT Product portfolio	Filter 1: RISKS		Filter 2: BENEFITS			
Triple bottom line	Short-listed risks		Short-listed benefits			
(TBL) dimension	Production phase	Use phase	Production phase	Use phase		
Environmental	<ol> <li>Pollution during ICT product manufacturing</li> <li>Avoidable &amp; non- recyclable e-waste generation</li> </ol>	None	1. Reduced energy consumption of infrastructure	<ol> <li>Reduced consumption, higher usage of renewable energy or enabled CO<sub>2</sub> emissions for customers</li> <li>Circular economy approach (partially) anticipated</li> </ol>		
Social	<ol> <li>Poor &amp; unethical working conditions</li> <li>Use of conflict minerals</li> </ol>	<ol> <li>Social exclusion and lock of social interaction</li> <li>Radiation &amp; health impacts</li> <li>Information security</li> </ol>	None	<ol> <li>Time freed up (incl. Sickness days reduction)</li> <li>Enabled participation of specific demo- graphic segments</li> </ol>		
Economic	None	None	None	None		

Method and content

- Methodological analysis and evaluation of the environmental and social benefits of DT products and services based on defined risks (7) and benefits (5)
- Inclusion of products that are likely or certain to be risk-free and offer at least one sustainability benefit regardless of the costsaving effects
- Calculation of the key figure "Share of sales related to sustainability" (share of sales with sustainable DT products & services in total sales)

Assessment result 2024 (baseline: FY 2024, excluding USA)

43 percent of total sales were generated with sustainable products and services

# Operational resource protection: environmentally conscious in everyday work

Since the 90s, we have been concerned with the question of how we can reduce the environmental impact of our business operations. In doing so, we look not only at our <u>network operations</u> and our <u>product portfolio</u>, but also at our offices, canteens and Telekom shops: whether in heating and hot water systems, electricity and water consumption, in the use of paper, office supplies and food, or in the handling of the space we use. We are also committed to the preservation of biodiversity with various measures.

Information on the topics of recycling and waste reduction can be found here in the CR report under circular economy.

# Milestones achieved, ongoing projects and goals

We sent out the first online invoice 25 years ago to reduce our paper consumption. Since then, we have made a lot of progress – and continue to set ourselves ambitious goals.



We revise our environmental guideline and make adjustments, e.g. with regard to the circular economy, biodiversity and building infrastructure.

## Where we stand in the reporting year



## Our approach

We want to use resources carefully and sparingly. We pursue various concepts for improving resource efficiency in the workplace – we take into account the energy consumption and space utilization of our buildings as well as water and paper consumption. Like the <u>circular economy</u>, operational resource conservation is also organized in accordance with our "<u>International Framework for Waste</u> <u>Management</u>" (Deutsche Telekom without T-Mobile US). In addition, we are concerned with the preservation of biodiversity: in addition to nature sponsorships and reforestation projects, our focus is also on our upstream value chain (more information below).

In 2024, we will have Group-wide 86 % of all customer invoices is made available electronically. In Germany, we saved around 7.2 million letters in 2024 compared to the previous year

- in the business customer segment: 21 % (fixed network) and 18 % (mobile)
- in the residential customer segment: 32 % (fixed network) and 29 % (mobile)

## Building operation: reducing greenhouse gas emissions

The operation of our own sites (including heating, cooling and power supply) generates greenhouse gas (GHG) emissions. Overall, however, we obtain more than 90 % of our total energy requirements from renewable energies and only cover a small proportion with conventional (fossil) energy generation (e.g. natural gas for heating). In order to further reduce this share, we are increasingly converting our heating systems to heat pumps. By using ambient heat and integrating renewable energy sources, we can further reduce CO<sub>2</sub> emissions and reduce operating costs.



In addition, we are driving forward intelligent building control. With the help of sensors, we collect data on temperature, humidity, occupancy and energy consumption in real time. Based on this data, we can dynamically adapt the building technology to optimize energy consumption and comfort. We also use campaigns to sensitize our employees to saving energy.

Internationally, we carried out energy-efficient optimizations of large sites and night-time shutdowns of advertising pylons in the reporting year, among other things. Simulation tests showed that technical systems can be operated with lower output.

We describe in detail the measures we are implementing specifically in Germany for energy-efficient building use in the "Deep Dive" section.

## Sustainably certified buildings

Deutsche Telekom uses 11 million square meters of building space across the Group – of which more than 558,000 square meters were certified according to the LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method) certification systems for sustainable construction in 2024. Around one million square meters met the criteria of a standard for sustainable buildings, but did not go through the certification process.

## Optimized use of space

Reducing vacancies through space reduction and better space utilization are also important levers for reducing our energy consumption and GHG emissions. To this end, we forecast our future demand for office space and test new, more flexible room and office concepts. We reduce space that is no longer needed – for example, by subletting it out. In this way, we avoid vacancies and save energy. At a total of around 11 million square meters, the total amount of our used space fell slightly compared to the previous year (11.2 million square meters).

#### Land use

in m<sup>2</sup>



<sup>a</sup> In the reporting year 2021, the data collection was extended to all entities, including the categories call center space and retail space.

 $^{\rm b}\,$  The 2023 values have been corrected compared to the publication of the previous year.

#### Land use 2024



Individual figures have been rounded.

#### Less paper consumption in offices and shops

The operation of a large company like Deutsche Telekom goes hand in hand with high paper consumption. We are pursuing the ongoing goal of eliminating paper as completely as possible throughout the Group ("Paperless Office"). To this end, we reduce paper documents such as invoices, flyers and customer communication and digitize them as far as possible. Internal processes such as sick notes or travel expense reports can also be handled paperless and digitally via an employee app.

We have also introduced print-on-demand systems – printing on demand and on demand. This has many advantages: quick start guides are printed on an order-by-order basis and do not have to be pre-produced, transported and stored. Changes in information sheets for our customers can be implemented at short notice – and there are no large amounts of outdated documents that need to be destroyed.

We are also reducing paper consumption in our shops: there are already paperless shops in Austria, Slovakia and Greece. In Poland, Hungary and Croatia, we have reduced paper consumption by 85 %, including by eliminating brochures and flyers.

#### Water consumption at a low level

As a service company, for example, we use little water compared to manufacturing companies – and almost exclusively in our offices. Water consumption also plays only a subordinate role in our supply chains. Therefore, water is not one of the material topics of our CR management.

Nevertheless, our environmental policy includes reducing our water consumption. In the reporting year, Group-wide water consumption fell by 3 %.

#### Water consumption

in m<sup>3</sup>



<sup>a</sup> The 2023 value has been corrected compared to the publication of the previous year.

#### **Conservation of biodiversity**

One of the main causes of biodiversity loss and species extinction is the increasing use of land by industry, agriculture and transport. In 2022, we specified in a <u>statement on the preservation of biodiversity and protection against deforestation</u> how we are doing our part to preserve biodiversity and protect forests from deforestation.

In 2023, we analyzed our impact on biodiversity and our dependence on ecosystem services. The basis for this was the parameters of the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) tool. The application helps to better understand and assess natural capital risks. The positive and negative effects of Deutsche Telekom's business activities on various biodiversity parameters along the upstream and downstream value chain were assessed. This includes, among other things, deforestation, species protection and protection of the oceans and ecosystems.

Our analysis showed that biodiversity is not a directly material issue for our own business operations. As a telecommunications company, we use little space compared to companies in many other industries. Through measures such as the creation of flower strips or mini-forests, we create an ecological balance for the areas we use with our technical, office and warehouse locations, call centers or shops.

However, our business activities have an impact on biodiversity in other areas – especially at the beginning of the upstream value chain. Therefore, our suppliers must comply with our environmental principles, which we regularly check during our on-site inspections. In the reporting year, we also conducted a biodiversity study together with the industry association GSMA, which examines the impact of the mobile communications industry.

Our approaches to the <u>circular economy</u> are also closely linked to the topic of biodiversity. With circular solutions, we can reduce the burden on ecosystems, for example from waste and pollutants. We also offer <u>environmentally friendly products and services</u> that can contribute to the preservation of biodiversity.

## Looking ahead

In the coming years, we want to further reduce greenhouse gas emissions from our building operations in order to achieve our climate targets. In the course of our cooperation with GMSA and through our internal analyses, we will also continuously evaluate the impact of our business activities on biodiversity.

# Deep Dive for experts

## Management & Frameworks

- For the German-speaking countries (DACH), the GSUS (Global Sustainability Services) department is responsible for the central management and implementation of measures in the field of sustainable buildings. In other countries, this is coordinated decentrally by the respective national teams.
- Responsibility for the topic of biodiversity lies with the GCR (Global Corporate Responsibility) department. She monitors relevant developments, analyzes risks and opportunities, and develops the overarching strategy with which we want to promote the protection of biodiversity in line with the company's goals.
- Environmental Guideline
- International framework for waste management in the Group

## Measures for more sustainable buildings in Germany

In Germany, we are implementing the following measures in the areas of energy management, heating and hot water, electricity, and smarter buildings and innovations, among others:

Energy

- In order to identify anomalies in energy consumption, we compare similar buildings with each other. For this purpose, we use key figures such as "kilowatt hours per square meter". In addition, we analyze the temporal course of energy absorption (the so-called load profile) of individual buildings. Based on the results of the analysis, we initiate measures to avoid load peaks and to optimize the use of energy.
- With the help of communication measures, we sensitize our employees to the topic of energy consumption and motivate them to behave in an energy-conscious manner in the workplace.
- During construction and renovation work on the building envelope, we pay attention to energy efficiency.

Deutsche Telekom's subsidiary PASM obtains the energy for the German Telekom Group companies. Its energy management system is certified according to the international standard ISO 50001. In addition, our office properties are subjected to an energy audit every four years in accordance with DIN standard 16247.

#### Heating and hot water

- Energetic optimization of central heating systems (e.g. by replacing outdated burner technologies)
- Renewal of heat generators and associated hydraulic components (such as pumps or valves)
- Use of waste heat (e.g. through the use of heat recovery systems)
- Use of combined heat and power (e.g. through combined heat and power plants or district heating)
- Reduction of supply losses in hot water preparation (e.g. by switching to decentralized hot water supply)

#### Electricity

- Use of LED lighting and motion detectors
- Switching off light sources (e.g. advertising pylons) at night
- More accurate regulation of room temperature in our grid infrastructure
- Use of efficient building technology (e.g. high-efficiency pumps, frequency-controlled motors for ventilation systems)
- Optimization of pre-programmed usage profiles (e.g. through absence profiles)
- Use of efficient building automation systems

#### **Smarter Buildings and Innovations**

- Use of sensors to actively adjust indoor temperatures in buildings in real time.
- Use of so-called predictive maintenance for the maintenance and troubleshooting of elevators.
- Predictive, weather-dependent control of the building technology.
- Thermal and fluid dynamics building simulation to improve structural design and building technology efficiency.
- Use of sensors to collect land use data. On the basis of this data, we optimize the energy consumption and profitability of our shops across the board.

# Mobility: climate-friendly and connected

Mobility plays a key role in the fight against climate change. We want to make our contribution to climate-friendly mobility: that is why, for example, in Germany, since 2023, we have been ordering part of our fleet exclusively with electric drive, promoting alternative and networked forms of mobility and expanding the charging infrastructure at our sites. We also support cities, regions and companies in setting up a nationwide charging infrastructure.

## Milestones achieved, ongoing projects and goals

We have been dealing with the environmental and climate impacts of mobility for 30 years. In the meantime, our focus is on driving forward the electrification of our fleet and smartly networking existing and new mobility services.



## Our strategy for more climate-friendly mobility

In order to drive the transport turnaround, we are using various levers. We want to promote the transformation towards climatefriendly drive systems throughout the Group. In Germany, our mobility strategy provides the framework. It is based on three pillars:

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Diverse mobility: Building a more efficient, increasingly sustainable fleet with climate-friendly drives, which also includes micromobility forms such as bicycles and escooters.



Digital services: Offer of carpooling and sharing solutions as well as a Telekom Car App

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Networked mobility: linking existing and new mobility services

## Company cars and service vehicles: focus on e-drives

Three factors have a significant impact on the level of our mobility-related greenhouse gas (GHG) emissions: the average number of combustion vehicles, the annual mileage and the associated fuel consumption. We have been working intensively on optimizing our vehicle fleet for many years. Through a wide range of measures, we were able to reduce the GHG emissions of our Group-wide fleet of around 30,000 vehicles by around 5,800 tons of  $CO_2e$  in the reporting year.

Of the approximately 9,000 company cars currently registered across the Group, 22 % are currently electric vehicles and 14 % have an alternative drive system. The latter category includes, inter alia, gas and hybrid vehicles. The electrification of our almost 21,000 service vehicles, which include, for example, vehicles for the field service of technicians, is also progressing. In Greece, for example, we made significant progress in the reporting year and expect more than 800 electric service vehicles to be in use by the end of 2025. This means that 28 % of the Greek fleet will have an electric drive. However, we continue to face greater challenges with our service vehicles than with company cars, for example with regard to available vehicle types, equipment, delivery capacities and charging infrastructure. That is why we're not only setting up more charging stations at our locations, but are also working to create charging facilities at our technicians' homes – so that they can start work from their homes without restrictions.



1,520 fewer combustion engines group-wide

5.1 % less fuel consumed compared to the previous year



Additional charging stations for e-bikes at 12 Telekom locations in Germany

#### Our fleet in figures: lower fuel consumption, more electric vehicles

The total number of our vehicles decreased in 2024 compared to the previous year. The majority of our vehicles continue to be dieselpowered, but we were able to reduce it again by 19 % in the reporting year. In the reporting year, we increased the total number of vehicles with alternative and electric drive systems by around 45 % compared with 2023.

Number	2024	2023	2022	2021
Total	29,916	30,090	30,816	32,297
Vehicles with diesel engines	20,909	22,080	23,256	25,098
Vehicles with gas engines	4,652	5,002	5,197	5,628
Electric vehicles	2,615	1,430	711	397
Alternative fuel vehicles <sup>a</sup>	1,740	1,578	1,652	1,174
Company cars	9,214	9,415	9,497	10,040
Service vehicles	20,702	20,675	21,319	22,257

<sup>a</sup> This includes e.g. gas and hybrid vehicles.

The fuel consumption of our vehicle fleet fell again in the reporting year. Overall, it fell by around 5.1 % in 2024. It fell by 3.0 % for service vehicles and by 9.7 % for company cars.

in liter	2024	2023	2022	2021
Fuel consumption (total)	43,457,118	45,796,157	48,423,063	49,167,373
Fuel consumption by diesel-powered vehicles	29,599,525	30,611,576	30,886,569	31,612,742
Fuel consumption by gasoline-powered vehicles	13,385,894	14,658,228	17,005,345	17,025,709
Fuel consumption by vehicles with alternative drives	471,698	526.353	531.150	528.923
Fuel consumption by company cars	12,999,592	14,402,330	14,634,852	13,760,425
Fuel consumption by service vehicles	30,457,525	31,393,827	33,788,211	35,406,948

Data is partly based on estimates, assumptions and projections. Some of the data originates from external service providers.

#### Nimble on two wheels

Since 2022, our service technicians in Germany have been using around 90 e-scooters for shorter and medium distances, especially in urban conurbations with difficult parking situations. Since 2024, the scooters have also been used by technicians who take care of fiber optic expansion in major cities and the maintenance of mobile antennas along ICE routes and at major events.

Since 2015, our employees have been able to lease a bicycle or e-bike as a resource-saving and health-promoting means of transport. In the reporting period, more than 10,500 bicycles were leased via this model. To ensure that our employees can also charge their ebikes during working hours, we have set up additional bike service stations with charging facilities at twelve Telekom locations in 2024.

## Accelerating e-mobility: Charging infrastructure at our sites and beyond

For the interaction of mobility and climate protection, a well-developed charging infrastructure for e-cars is needed. Since 2018, our subsidiary for the construction and operation of charging infrastructure – Comfortcharge GmbH – has been active at Deutsche Telekom locations throughout Germany. Fast-charging stations from Comfortcharge are publicly accessible at Deutsche Telekom locations and can equip an electric vehicle with enough energy for a range of around 100 kilometers in ten minutes.

#### Comfortcharge's offer included around 280 fast-charging stations

at our locations in 2024.

#### Comfortcharge operates a total of around 510 charging systems

for the electric refueling of company, business and employee vehicles at our locations.

T-Mobile US is also investing in charging stations for electric vehicles at its own locations.

#### Charging infrastructure for cities, regions and companies

We support cities, regions and companies in setting up and operating a charging infrastructure: our solution includes planning, construction, installation and service. In addition to the hardware, software for operating the charging stations and for end customer management is also included in the scope of services.

In 2024, we installed a total of almost 2,200 e-charging stations worldwide – around 1,500 more than in the previous year.

Number	2024	2023	2022	2021
eMobility charging stations installed	2,174	698	854	627
Standard charging stations (≤ 22 kW)	1,804	645	653	426
Wall-mounted standard eCharging stations	429	386	296	233
Detached mounted standard eCharging stations (outdoor)	1,375	259	357	193
HighPower charging stations (> 22 kW)	370	53	201	201
Detached mounted high power eCharging stations (outdoor)	370	53	201	201

## Technicians in action for e-mobility

Our partners - energy suppliers, electronics retailers, hardware and automotive manufacturers as well as providers of fleet solutions nationwide - and their customers benefit from the services of Deutsche Telekom Außendienst GmbH (DTA): it provides qualified technicians throughout Germany who carry out various mobility services on site at the customer's premises. More than 50 partners offer various eMobility services with the help of Technical Service. This includes services such as the installation of charging equipment as well as their fault clearance and maintenance.

- Of of our almost 2,200 installed e-charging stations, more than 1,300 charging infrastructures were installed by DTA in 2024.
- DTA carried out over 6,900 eMobility orders in 2024.

## Looking ahead

Climate-friendly mobility is an important lever for achieving our goal: to be climate-neutral ("net zero") along the entire value chain across all three scopes by 2040. In order to create the best conditions for e-mobility, our focus is particularly on the further expansion of the charging infrastructure – for our fleet and beyond. We also promote innovative offers for a smart mobility mix.

# Working together for a more sustainable future: our employee initiatives for the environment and climate

Smart textile collection containers, networked beehives, a search engine that plants trees: All these projects - and many more - have been implemented in recent years on the initiative of our employees. Many of them are involved in various initiatives and programs around the world for environmental protection and sustainability. Through their commitment, they strengthen a sustainable corporate culture and contribute to achieving the goals of our CR strategy.

Our employees are not only committed to the environment and climate, but also to social issues. You can find more about this here in the CR report on the Social Commitment overview page and in more detail under Volunteering and Financial Commitment.

#### Milestones achieved, ongoing projects and goals

Since 2018, Deutsche Telekom has had official sustainability ambassadors - the "Green Pioneers". Within a few years, their number has multiplied from around 80 to over 300.



#### Where we come from

#### Green Pioneers for a sustainable corporate culture

As internal sustainability ambassadors, the Green Pioneers are specifically on the lookout for potential for improvement and initiate measures. With campaigns such as swap meets, planting and garbage collection campaigns or an in-house carpooling service, they motivate their colleagues to be more sustainable in their everyday work – for example, by offering the opportunity to order second-hand office supplies. In addition, the Green Pioneers gave the impetus to shred old packaging and reuse it in logistics as filling material.

Currently, around 300 Green Pioneers are working in Germany at around 60 locations and in more than 30 working groups. Depending on their location, interests and know-how, they join together to form thematic or regional "hubs". We support their use, e.g. by making participation possible through flexible working models.

Since their inception, the Green Pioneers have already brought many positive changes to the company – around topics such as resource conservation, circular economy, biodiversity, mobility and much more.

#### International Green Pioneers Highlights from 2024

- The Ecosia search engine has been the standard in the browsers of the entire Telekom Group since 2024 on the initiative of the Green Pioneers. Ecosia uses the profits from wanted ads to plant trees.
- In 2024, more than 230 orders for used office supplies were placed in Germany.
- In Spain, the Sustainability Ambassadors brought colleagues together for the European Mobility Week to drive to work together at "Magenta Carpooling".
- In Hungary, workers organized a Plastic Cup Pirates Volunteer Day, where over a ton of garbage was collected from the Tisza floodplain in Szeged.

## Smart technology for textile recycling

In Germany, the Green Pioneers have been dedicated to textile recycling since 2021: on their initiative, smart textile containers have been set up at various Telekom locations to return old uniforms, worn-out jeans and disused cotton towels to the textile cycle. IoT ("Internet of Things") technology is installed in the special collection containers, which displays the level of textiles in the Telekom cloud. This allows us to see when the containers are full and avoid unnecessary trips to empty them – this saves CO<sub>2</sub> and fuel. The salvaged clothing is recycled to a high standard. In 2024, 75 tons of clothing were collected, the equivalent of approx. 770,000 liters of water and over 1,100 tons of CO<sub>2</sub> are saved. In 2024, the Green Pioneers have expanded the initiative to Austria.

#### Strengthening the circular economy

Since the end of 2019, we have been working with the non-profit company AfB, which focuses on inclusion and specifically creates jobs for people with disabilities. AfB carefully refurbishes Deutsche Telekom devices that are no longer needed in Germany and offers them for sale – mostly notebooks, PCs and monitors. The Green Pioneers support this through internal sales campaigns for our employees in Germany and Switzerland. In the reporting year, Deutsche Telekom employees purchased more than 200 refurbished IT devices at the sites, thus contributing to extending the service life of the equipment.

#### The commitment of the Green Pioneers in numbers



Over 300 Green Pioneers in Germany and 15 internationally



More than 200 IT equipment that is no longer needed is returned to the cycle through internal sales campaigns



Approx. 770,000 liters of water and over 1,100 tons of CO<sub>2</sub> saved through optimised logistics in textile recycling

#### Promoting knowledge sharing

The Green Pioneers have extensive knowledge. They share this knowledge as multipliers – for example at the "Learning from Experts" (LEX) sessions, our platform for the flexible exchange of knowledge among colleagues. There, for example, they talked about planetary overload limits and climate communication. In total, our Green Pioneers held more than 20 LEX sessions in 2024. The sustainability ambassadors themselves also take part in further training initiatives, for example via the interactive platform Green Talks. There, experts share their knowledge and perspectives, for example on Deutsche Telekom's sustainability strategy, green AI and sustainable design guidelines in the reporting year. In addition, since 2024, the Green Pioneers have been able to deepen their knowledge of climate change with the help of creative methods – for example, in the new T-Systems learning program "Climate Fresk". The "Fresk" workshops are open to all employees.

## Working for a cleaner environment



Our employees are also active in environmental protection away from the Green Pioneers: in the reporting year, employees in Greece continued a campaign with the environmental organization ENALEIA as part of the COSMOTE BLUE initiative for less plastic pollution in the Mediterranean. From 2023 to the end of 2024, we were able to remove over 60 tons of plastic waste from the oceans and remote coastal areas and recycle almost 37 tons of it. In addition, we have set up an educational program for fishermen on topics such as responsible fishing and ocean cleanup. So far, around 260 fishermen have taken part.

T-Systems also organized a garbage collection campaign in 2024: on the occasion of World Earth Day in April, employees in five countries collected waste from public areas, among other things.

## Looking ahead

Working together to promote the transition to an even more sustainable Telekom and society – this is the mission that the Green Pioneers in Germany have been pursuing for seven years now. In the coming years, the focus will be increasingly on international cooperation to exchange best practices and try out new approaches.

## **Deep Dive for experts**

#### Management & Frameworks

The Group Corporate Responsibility (GCR) department organises meetings, lectures and activities for the Green Pioneers and shapes the framework conditions.