

● Our performance: Environmental performance

Our transition to net-zero

KPN is already one of the world’s most sustainable telecom companies and every day is a chance to do better. This includes playing our part in tackling climate issues as part of our transition to sustainable growth. Supplier and customer engagement are important factors across the value chain in creating the solutions we need to achieve our ambitious agenda of zero waste and zero emissions.

KPI	Result 2023	Result 2022
Reduction in KPN Group energy consumption compared to base year 2010	52%	48%
Reduction of value chain CO ₂ e (scope 3) compared to base year 2014	30%	29% ¹
Resource outflow: reuse and recycling	87%	87% ¹

1 The 2022 figures have been restated, for details we refer to Appendix 10

Chapter contains information on material topics

- 01. Circular economy (ESRS E5)
- 03. Climate change (ESRS E1)
- B Macroeconomics/geopolitics (entity specific)

Our transition to a net-zero organization and value chain

We are committed to connecting everyone in the Netherlands to a sustainable future with ambitious environmental objectives, both in the short and long-term. In doing so, we link our ambitious targets directly to green financing instruments. Through our approach to sustainability, we aim to positively influence the environmental impact of our total supply chain. We do this from suppliers to customers by collaborating towards zero waste and zero emissions. This includes our procurement process, operations, and the impact of our products and services before, during and after use.

The Double Materiality Assessment shows our key impact in the areas of climate change and resource use/circular economy. Relating to biodiversity, we started a number of projects.

Our services also enable our customers to become more sustainable, for example, via remote working. We believe that a telecom provider like KPN can play an important role in the energy transition by providing real-time data solutions for energy-related assets in our own network and for our customers.

In this way, we make a contribution to the achievement of global, European and national goals, such as the UN Sustainable Development Goals, the Paris Agreement and the European Green Deal (for example Fit for 55). Our environmental strategy is aimed at our contribution to limiting global warming to 1.5 °C. Our transition plan is publicly available on our corporate website (overons.kpn/en/). This policy covers our material impacts and dependencies related to our material environmental matters.

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Our initial net-zero Science Based Target was approved in February 2017. Our current long-term target is more ambitious: reach net-zero emissions by 2040, reduce our emissions by a minimum of 90% compared to a 2015 baseline and neutralize remaining embedded emissions. Therefore, this target is currently being re-validated by the Science Based Targets Initiative (SBTi).

Decarbonization levers, climate-mitigation actions and locked-in emissions (in kTon CO₂e)

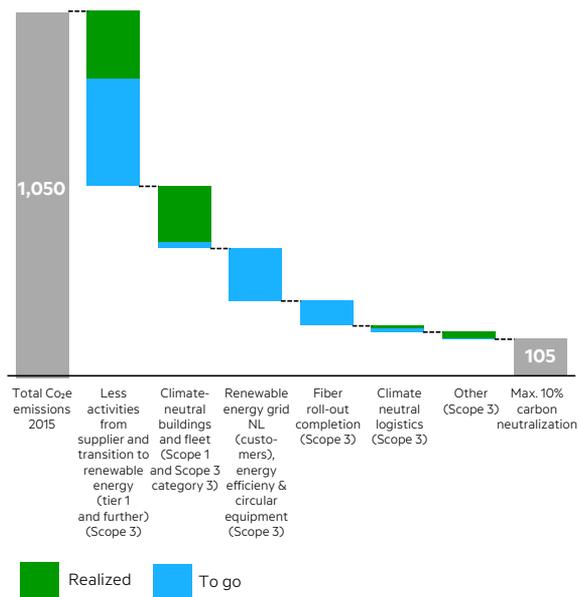


Figure 1 shows our estimate for the values of the key carbon reduction levers to net-zero. The scope 3 CO₂e emissions of the energy usage of devices sold or leased to our B2B customers are not included, as a reliable estimate is not available.

Our scope 1 emissions mainly relate to the conversion of our fleet to fossil fuel-free. Alongside this, we use gas to heat our buildings and use diesel power generators sparingly. We plan to reduce the CO₂e emissions from our company-car fleet by limiting our inflow to fossil fuel-free vehicles by 2025. We will reach this goal by converting to electric cars in lease arrangements for our own personnel and by using electric and HVO-100 (biodiesel)-fueled cars for engineers.

Our scope 2 emissions mainly relate to the electricity use by our network, offices and stores. Our electricity usage has been based on 100% renewable electricity since 2011. Therefore, our market-based emissions for scope 2 are already zero. We will continue to reduce energy usage in our operations, even though data usage continues to grow. Our reduction target is 48%

GWh reduction of electricity consumption of KPN group in 2030 compared to 2010, which means we will be using less than 400 GWh by 2030. We are updating our energy mix by committing to the Hollandse Kust West wind farm for 15 years as per 2027 (which will deliver >50% of our long-term required capacity) and by placing solar panels on technical buildings. We will continue to investigate options to secure additional long-term renewable energy and smart energy systems as part of our roadmap to optimize carbon-free energy.

Our scope 3 emissions reflect our impact in the value-chain relating to production, transport and usage of the equipment we buy from suppliers and products we provide to our customers. The key decarbonization levers in the value chain emission are: our suppliers becoming CO₂e neutral, our customers using green electricity in the Netherlands and the completion of our fiber network. Other drivers include electricity usage of customer equipment at home or in offices (via sleep mode features for example), circularity of equipment and lower impact of logistics in our value chain.

Our target is to reduce our scope 3 emissions by a minimum of 90% compared to a baseline in 2015, and will neutralize residual emissions with a maximum of 10% of the baseline. We have an intermediate target of 45% scope 3 emission reduction in 2030 vs 2014 (which equates to 41% scope 3 emission reduction vs 2015).

Circular economy as a driver to net-zero

To realize our ambition to become net-zero we see the need for both an energy transition and a materials transition. The energy transition is served by KPN lowering energy usage, using renewable energy, becoming more energy efficient, given data growth, and preparing to use the right energy at the right time. The materials transition involves both finding lower-impact ways to produce materials and applying circular-economy principles.

The circular economy departs from the traditional linear economy model which follows a take-make-dispose approach. Instead, it promotes the use of renewable and secondary resources and the reduction of waste by designing products and systems that are regenerative, restorative, and waste-free. This approach aims to keep products and materials in use for as long as possible, reducing the need for new resources by applying secondary raw materials. We also apply circular business practices like close-loop supply chain, second-hand retailing, maintenance, refurbishing and repair, which helps to minimize waste in the outflow of materials.

KPN started its circular economy journey in 2016 by setting a moonshot goal to become close to 100% circular by 2025. We started by focusing on the outflow of products, aiming to improve collection rates and maximize the reuse and recycling of materials.

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Last year, we introduced the Circular Transition Indicator (CTI) framework to measure our circular performance on both inflow and outflow. Our next step is to synchronize these reporting efforts within the CSRD framework and broaden the scope of our circular metrics from B2C to B2B and TDO Network. In

the business market we are preparing services for circularity by focusing on closing the loop for KPN-owned equipment. This includes documenting process flows, embedding circular clauses in vendor contracts and measuring circularity.

CO₂e emissions and energy management

CO₂e emissions own operations scope 1 and 2 (in kTon)

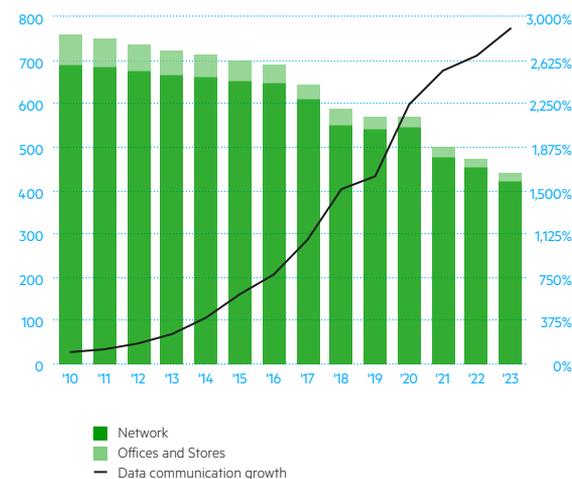
	2023	2022	2010 base year	2023	2022	2010 base year
	Gross scope 1 and scope 2 location based			Net scope 1 and scope 2 market based		
Scope 1 NL (direct own emissions)	8.7	11.9	58.8	-	-	58.8
Scope 2 NL (indirect own emissions)	153.6	207.0	347.0	-	-	35.9
KPN NL	162.3	218.9	405.7	-	-	94.7
KPN non-NL entities	-	-	25.0	-	-	25.0
KPN Group	162.3	218.9	430.7	-	-	119.8

KPN's operations are climate-neutral. We use 100% green electricity generated by local and European wind farms. Other CO₂e emissions (5%) from gas (buildings), diesel and petrol (cars) and emergency power are compensated by REDD+ forest compensation projects. Without compensation, our gross scope 1 and scope 2 location-based CO₂e emissions would be 162.3 kTon CO₂e.

Relating to scope 1 emissions, our savings on car fuel compared to 2010 was 88% in 2023. We added 498 electric cars and 42 HVO100 fueled cars as part of our fleet transformation, which equates to an inflow of 98% fossil fuel-free cars (lease and engineers). We exceeded our 2023 target on inflow of 95% fossil fuel-free.

Relating to scope 2 emissions, our electricity consumption in 2023 was 446 GWh, which is a decrease of 32 GWh compared to 2022. Compared to base year 2010, this amounts to a reduction of 42%, while the data communication volume increased 28-fold in the same period. Due to our energy excellence program, we are on track to reach our target of 400 GWh in 2030. This program is subject to a monthly management review and has our continuous focus.

Electricity consumption (GWh) compared to data communication growth (%)

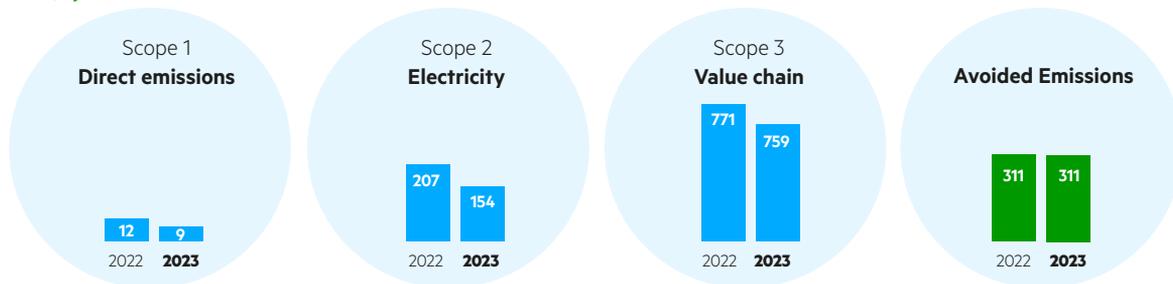


Of our electricity consumption, 95% is consumed in the mobile and fixed networks. The network consists of ~22,000 sites with an electric grid connection. The total electricity consumption of the network in 2023 was 426 GWh, which is a decrease of 7% compared to 2022. The electricity savings mainly result from network rationalization.

The total energy consumption of KPN has decreased 52% compared to 2010 (in PJ).

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Overview of own emissions (scope 1 and 2), value-chain emissions (scope 3) and avoided emissions enabled for customers (CO₂e in kTon)



More than half of the electricity that KPN will consume from 2027 will come from the wind farm Ecowende in the North Sea. KPN signed a 15-year agreement, which provides options to improve the allocation of supply of renewable energy according to KPN’s daily demand. This is part of our vision to use the right energy at the right time.

Our emissions in the value-chain (scope 3 emissions) are 759.4 kTon CO₂e. Compared to 2022, our value-chain emissions decreased by 1%. See Appendix 10 for details. We engage with suppliers on carbon-reduction in the value chain, via the CDP and EcoVadis supplier-engagement programs, among others. In addition, we joined forces on reducing scope 3 emissions with other telecom companies via industry bodies like the Joint Alliance for CSR (JAC). We updated our latest iTV tuners to have an energy-save mode out of the box, which helps TV customers to use less energy at home.

As KPN’s own operations are already climate-neutral, all our services are low-carbon. By using our cloud services, video and audio conferencing, our business customers can meet online, reducing the need to commute or use office space.

CHALLENGE

The demand for relevant non-financial KPIs and quality requirements for these KPIs is continuously increasing. Due to the integration of our scope 3 emissions into certain finance arrangements, the importance of accurate and consistent reporting on these KPIs has also increased. Emerging legislation, such as the CSRD and Corporate Sustainability Due Diligence Directive (CSDDD), require significant additional implementation efforts to improve data availability, and data maturity. The telecom sector has significant material impact in the value chain, which requires adequate data exchange to report on interrelated themes like material flows for circular economy and human rights.

This will continue to result in the need to amend our calculations with the purpose of increasing accuracy for our stakeholders. We need ever-more granular data and transparency from our supply chain. The complexity of the calculations and some degree of uncertainty remain since they are still somewhat based on assumptions. These developments improve our insights in how to facilitate improvements in executing our goals.

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Avoided emissions enabled for KPN customers using our ICT services is estimated at 311 kTon CO₂e and 110 tons of PM₁₀. KPN enables teleworking to its customers by providing an internet connection. See Appendix 10 for further information on our methodology to measure direct emissions (scope 1), indirect emissions (scope 2), value chain emissions (scope 3) and estimated avoided emissions enabled for KPN customers. Scope 1 and 2 are reported in line with the GHG Protocol. Scope 3 is as much as possible based on the information available in line with the GHG Protocol.

We identified in 2023 that the Scope 3 emissions were not completely reported in previous years for category 11 and 13 for the B2B business as no reliable data is available. For returned products sold (category 12) the estimated emissions are included in CAT 1 and 9 based on the spend method as reliable process based data is not available. Emissions of not collected products are not included as reliable data is not available. Scope 3 emissions from Investments (Category 15) have not been reported for equity investments smaller or equal to 50% as Scope 1 and 2 emissions and EEIO data of most of these investments are not available. In 2023 we updated the reporting criteria to reflect this. We are working on improving the data quality of reported scope 3 emissions.

In addition, we want to enable the energy transition via smart energy systems through secure data-exchange services. For this, we are building ecosystems with partners for enabling connectivity, data processing and cloud applications.

Circular economy performance

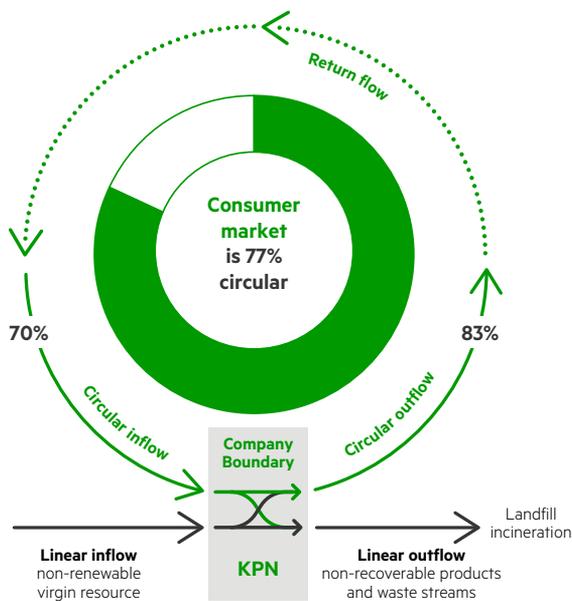
We continued to ask for redesign for circularity for the products we use, for example by applying recycled technical materials (such as plastics).

For outflow of materials and waste, we aim to maximize reuse and recycling, and avoid incineration and landfill in line with the waste hierarchy to work towards zero waste. Our reuse and recycling rate remained stable on 87% (2022: 87%¹). For KPN-owned customer equipment our aim is a closed-loop supply chain. We kept our return rate for modems and TV set-top boxes at 87% (2022: 87%, percentage has been restated, see Appendix 10 for details). As well as offering refurbished phones and repair services, we also offer a trade-in service for mobile phones. We offer phones with eSIM or recycled plastic sim cards and have reduced the packaging size to minimize the materials impact of sim cards. Regarding critical raw materials (CRM), we performed several studies to identify CRM-related risks and/or opportunities.

We collaborate with the Joint Alliance for CSR (JAC) to share knowledge on the circular economy. With suppliers, we continued to collaborate using life-cycle analysis to assess

product sustainability and improve product design. In addition, we take part in Circular Circuits, a multidisciplinary collaborative research project focused on developing a fully circular generation of electronics.

Circular Transition Indicator (CTI)



To measure circularity in an even more integrated manner for the company, we are implementing a framework based on the Circular Transition Indicator (CTI) metrics from the World Business Council for Sustainable Development (WBCSD). In 2023, we report on a selected scope of our consumer market segment (see Appendix 10 for details). The CTI measure focuses on KPN-owned equipment. For this scope, our consumer market segment is 77% circular (compared to 75% in 2022, which was restated due to refinement of outflow figure). This figure is compiled from a circular inflow of 70% and a circular outflow of 83%.

We aim to extend the scope of this framework to the B2B market. This year we prepared five services in the business market for circularity (goal 2023: 6). This is based on three principles: contract, process and measuring material inflow and outflow. The ambition remains nine services (cumulatively) by 2024 and twelve services by 2025. The methodology of this metric is further explained in Appendix 10.

We have noticed that the CSRD and our use of CTI have a slightly different approach to measuring circularity, and we will address

¹ Restated, for details see Appendix 10

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this in our next Integrated Annual report. The difference mainly relates to separating the outflow of material into volume of waste and volume of devices put on the market.

Assessment of climate change-related risks and opportunities

Climate change is integrated in KPN's Internal Risk Management and Control System, which is designed to avoid, mitigate and address the risks associated with KPN's strategic operational, financial, regulatory and compliance objectives. We have taken into account the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which include matters such as governance, climate strategy, risk and opportunity assessment, and key performance indicators (see overview in Appendix 5).

Our climate-related risks

Regulatory risks	Technology risks	Market risks	Reputation risks	Chronic & acute physical risks
Price increases for products and services due to rising energy taxes, grid transport and energy prices	Need for accelerated replacement of equipment required to improve energy efficiency	Higher operational costs due to increased energy prices and availability of critical raw materials in our supply chain	Not meeting environmental goals and reporting requirements will have reputation impact on our stakeholders (shareholders, bondholders, employees, customers and society)	Increased electricity and water usage for cooling with rising global temperatures and sea level, impact of extreme weather events like floods on KPN's infrastructure and supply chain

Our climate-related opportunities

Resource efficiency	Sustainable design	Energy sourcing	Resilience	Financing
Improved efficiency based on savings via our Energy Excellence program. Lowering the need for virgin resources as part of our circular efforts	Via our digital services we contribute to the avoidance of carbon emissions for customers. This is via circular products and services with lower carbon impact of materials	Via Power Purchase Agreements we support additional renewable local energy sources	By integrating climate risks and opportunities into our strategy, we have an impact on investments and network modernization decisions. Closed loop supply chain improves product availability	Access to new sustainable financing increases our investment base and improves terms versus conventional financing instruments

Climate-change scenario analysis

KPN assessed the physical risks of climate change by performing scenario analysis on the vulnerability of our infrastructure. We applied the Climate Impact Atlas¹ considering time horizons up to 2030, 2050 and 2085. The high scenario corresponds to the KNMI'14 scenario WH (*warm hoog*), that is the worst-case scenario for most of the effects. The low scenario generally corresponds to the KNMI'14 scenario GL (*gematigd laag*), in which the changes remain most limited.

KPN has selected three scenarios based on the Climate Impact Atlas layers: Urban Heat islands, Precipitation and Flooding.

For the locations that have a high risk of flooding, extreme precipitation or heatwaves, additional countermeasures will be investigated. Such measures could consist of moving hardware to higher levels in buildings, implementing water barriers or installing additional cooling equipment.

The KNMI'14 scenarios (climate-change scenarios) are based on the worldwide climate projections of the Intergovernmental Panel on Climate Change (IPCC)². On 9 October 2023, KNMI published new climate scenarios, which replace the '14 climate scenarios. The Climate Impact Atlas is not updated yet for these scenarios, and we expect this will happen in 2024. We will then update our scenario analysis accordingly.

Biodiversity

Our actions towards zero waste and zero carbon will help us mitigate negative impacts on biodiversity in our own operations and supply chain. To foster a positive impact on biodiversity, we aim for nature inclusive infrastructure, offices and services. In 2023, we realized our first nature inclusive technical building for fiber in cooperation with Naturalis Biodiversity Center. Further pilots for other locations are planned for 2024. We are building a vision and roadmap for nature/biodiversity, applying the Taskforce for Nature Related Financial Disclosures (TNFD) with the support of Leiden University. We also drafted an initial exploration of our biodiversity impact and it shows that our impact is mainly indirect. In 2024 we will further explore our biodiversity impact and start working on reducing it. Furthermore, we co-operate with the Groene Netten coalition of eight large Dutch infrastructure parties on sustainability, including biodiversity.

¹ <https://www.klimaat-effectatlas.nl>

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Investments and funding supporting our transition

As of 2021, we started applying the sustainable targets linked to three types of finance instruments:

1. A Revolving Credit Facility of EUR 1 bn with a margin linked to KPN's performance on four sustainability targets that are assessed annually: (i) speeding up the digitization of the Netherlands by rolling out fiber optics; (ii) reducing KPN's energy consumption, (iii) reducing CO₂e emissions throughout the chain (scope 3 emissions) and (iv) Modernization of mobile network to increase its capacity and enable 5G. This credit facility is currently still available to KPN.
2. A Sustainability-Linked Bond (SLB) of EUR 0.7 bn, with a coupon linked to KPN's commitment to significantly reduce scope 3 CO₂e emissions by 2030. The decarbonization levers are explained in this chapter (see above).
3. A perpetual Green Hybrid Bond of EUR 0.5 bn issued under KPN's Green Finance Framework. The proceeds of this bond finance or refinance projects with positive environmental impact in three areas: implementing our energy efficient fiber optic network, investments that extend product life and reduce impact of waste on the environment and the roll-out of our fossil-free fleet. The proceeds of this bond were fully allocated to the three destined buckets in the 2022 calendar year. Our allocation report is available at: KPN Green Bond Allocation report 2022.

We established a Green Finance Framework and a Sustainability-Linked Finance Framework, outlining the principles we apply for sustainable financing instruments. The above instruments represent 28% of our total financing commitments.

EU taxonomy

As of 2021, the EU Taxonomy legislation came into effect for KPN. We concluded that KPN's turnover is relatively small. The eligible part under the economic activities currently in scope of the EU taxonomy regarding the six prescribed environmental objectives is less than 0.5% of KPN's total turnover. KPN's Opex activities in scope of the EU taxonomy is also very limited; 0% of the activities are qualified as eligible. For 2023, ~3% of our Capex activities qualified as eligible, of which we concluded that ~2% was aligned. Alignment implies that these economic activities make a substantial contribution to at least one of the climate and environmental objectives, while also doing no significant harm to the remaining objectives and meeting minimum standards on human rights and labor standards. For further details, see Appendix 7.

We have concluded that the roll-out of fiber is currently not eligible. However, we believe this is an important enabler for climate-change mitigation, also providing significant electricity savings compared to copper in our core network.



What do you think?

Share your opinion now on the statement below and 9 other thought-provoking topics that impact our company and environment.

The increasing demand for data is not sustainable for limiting the carbon footprint

Scan and vote along!



² <https://www.knmi.nl/kennis-en-datacentrum/achtergrond/knmi-14-klimaatscenario-s#6>