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Appendix 7: Environmental figures

Notes

As outlined in the Combined Independent Auditor's Report (page 171), Appendix 7 is part of the assurance scope of EY's assurance procedures over KPN's 2020 sustainability information.

Scoping and calculation methodology of the reported items are specified in Appendix 3 Transparency, materiality and stakeholder engagement (page 185). Coverage of all figures according to materiality assessment (98% of operational cost).

Table 1: Energy consumption (in PJ)

	Target 2030 compared to base year	Target 2023 compared to base year	2020 ¹	2019	2018	2017	2010 base year
The Netherlands			2.428	2.728	2.841	2.82	3.662
KPN non-NL entities			-	-	-	0.012	0.217
KPN Group	-55%	-49%	2.428	2.728	2.841	2.832	3.879
Energy directly consumed			0.246	0.386	0.445	0.483	-
Energy indirectly consumed			2.182	2.342	2.396	2.349	-
KPN Group	-55%	-49%	2.428	2.728	2.841	2.832	3.879

¹ In 2020, energy consumed decreased by 37% compared to base year

Table 2: Electricity consumption (in GWh)

	Target 2030 compared to base year	Target 2023 compared to base year	2020 ¹	2019	2018	2017	2010 base year		
						NL	KPN Group	NL	KPN Group
Network			548	580	595	581	583	694	697
Offices & Shops			25	37	36	33	34	70	72
KPN Group	-48%	-42%	573	617	631	614	617	764	769

¹ Electricity consumption decreased by 25% versus base year

Table 3: Fuel consumption, lease vehicle fleet

	Unit	Target as from 2025	Target 2021 compared to base year	2020 ¹	2019	2018	2017	2010 base year
Petrol, diesel and LPG	1,000 liter	100% inflow of fossil fuel free cars	-70%	4,311	8,457	9,346	9,429	16,597
Electric	MWh			1,891	1,756	839	271	-

¹ Fuel consumption decreased by 74% versus base year

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Table 4: Other Energy consumption KPN Group

	Unit	2020	2019	2018	2017
Natural gas	1,000 m ³	2,746	2,580	3,424	4,390
Heating purchased	GJ	23,531	27,618	29,653	32,279
Cooling purchased	GJ	97,191	92,891	94,571	95,139
Diesel for emergency power generators	1,000 liter	140	116	103	129

Table 5: CO₂e emissions own operations Scope 1 and 2 (in kTon)¹

	Target 2050	2020	2019	2018	2017	2010 base year
Scope 1 KPN NL	0	0	0	0	0	58.8
Scope 2 KPN NL	0	0	0	0	0	35.9
KPN non-NL entities	-	-	-	-	0	25.0
KPN Group	0	0	0	0	0	119.7

¹ The reported emissions in the table are net scope 1 and scope 2 market based. In the table in section CO₂e emission and energy management (p.57) both net and gross scope 1 emissions are reported as well as the location and market based scope 2 emissions.

Table 6: Energy efficiency and Carbon intensity indicators target

	Target 2021	2020	2019	2018	2017	2010
Ton CO ₂ per Gb/s KPN Netherlands (2010=100)	0	0	0	0	0	100
GWh per Gb/s Network Netherlands (2010=100)	3.8	3.9	5.4	5.6	7.8	100

Table 7: CO₂e emissions Scope 3 (in kTon) KPN The Netherlands

	Target 2040 compared to base year	Target 2025 compared to base year	Target 2021 compared to base year	2020	2019	2018	2017	2014 base year
CAT1 Purchased goods and services				504.4	498.7	518.6	544.3	535.1
CAT2 Capital goods				203.4	198.5	174.9	162.8	237.5
CAT3 Fuel and energy related activities				2.7	5.1	9.7	26.9	93.0
CAT4 Upstream transportation and distribution				-	-	-	-	-
CAT5 Waste generated in operations				0.0	0.1	0.5	0.1	0.3
CAT6 Business travel				0.9	3.2	3.1	3.5	3.2
CAT7 Employee commuting				2.9	16.5	15.9	15.5	17.7
CAT8 Leased assets				-	-	-	-	-
CAT9 Downstream transportation and distribution				15.2	17.6	18.3	19.6	23.0
CAT10 Processing of sold products				-	-	-	-	-
CAT11 Use of sold products ¹				2.0	2.4	2.6	3.3	4.4
CAT12 End-of-life				-	-	-	-	-
CAT13 Downstream leased assets ¹²				154.0	155.4	155.2	168.8	149.2
CAT14 Franchises				-	-	-	-	-
CAT15 Investments				-	-	-	-	-
Total CO₂e emissions	-50%	-20%	-18%	885.4	897.5	898.9	944.7	1,063.2
Total upstream CO₂e emissions				714.3	722.1	722.7	753.0	886.8
Total downstream CO₂e emissions				171.1	175.5	176.2	191.8	176.5

1 Due to new Dutch reporting principles the CO₂e conversion factor of the gridmix is increased from 413 to 475 g CO₂e/kWh. 2020 is calculated with 475g and previous years are restated. See Appendix 3 (p. 185) for further information.

2 In 2020, KPN improved its calculation method using the number of customers instead of the number of installed devices.

Table 8: Other environmental impacts KPN Group

	Unit	Target 2021	2020	2019	2018	2017
Materials usage						
Cable length ¹	1,000 km		~618	~587	~571	~566
Paper consumption	Tons		201	268	459	505
% FSC or PEFC	%		100%	100%	100%	100%
Coolants (e.g. R407C and R417A)	kg		661	657	826	839
Water						
	1,000 m ³					
Consumption offices and shops			49.2	52.4	66.5	76.0
Consumption operations			34.7	31.7	51.7	91.7
KPN Group		80	83.9	84.1	118.2	167.7

1 Restated 2017-2019 for FTTH roll-out and empty fiber optic ducts

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Table 9: Estimated avoided energy consumption and CO₂e emissions by usage of KPN

	Target 2021	Target 2020	2020 ¹	2019 ⁴	2018	2017
Estimated avoided energy consumption (in PJ)						
Teleworking (enabled by KPN connectivity) ²			7199	3065	2144	1434
Dematerialisation			0.170	0.169	0.131	0.130
KPN Audioconferencing ³			0.077	0.109	0.135	0.130
KPN Videoconferencing ³			0.027	0.050	0.053	0.056
KPN Hosting services			0.020	0.032	0.030	0.035
KPN iTV Cloud solution			0.014	0.012	0.018	0.018
Total estimated avoided energy consumption			7.507	3.437	2.511	1.804
Total energy consumption KPN			2.428	2.728	2.841	2.832
% Avoided energy consumption compared to energy consumption KPN	200%	94%	309%	126%	88%	64%
Estimated avoided CO₂e-emissions (in kTon)						
Teleworking (enabled by KPN connectivity) ²			548.6	259.7	172.3	114.5
Dematerialisation			11.9	12.4	10.4	10.3
KPN Audioconferencing ³			5.3	8.3	10.2	10.0
KPN Videoconferencing ³			1.8	3.7	3.8	4.2
KPN Hosting services			2.6	4.3	3.5	4.0
KPN iTV Cloud solution			2.4	2.1	2.5	2.5
Total estimated avoided carbon emissions			572.6	290.5	202.7	145.4
Avoided Particulate matter emissions (PM₁₀) in tons						
Total avoided PM ₁₀ emissions ²			1,798	795	not calc.	not calc.

1 Large increase in avoided energy consumption, CO₂e-emissions and PM₁₀ emissions due to increased teleworking caused by COVID-19 pandemic.

2 Avoided energy consumption, CO₂e-emissions and PM₁₀ emissions by Teleworking are calculated for 2020 and have been restated for 2019 using an updated norm for the number of hours teleworking per week per teleworker. We switched to a new source (Kennisinstituut voor Mobiliteitsbeleid) which provides more up to date values, as our previous used source (CBS) no longer published updated figures as of 2017. See Appendix 3 (p. 185) for further information.

3 Decrease in usage of dedicated audio-/videoconferencing services due to intensified usage of cloud collaboration tools and applications like e.g. Microsoft Teams and ZOOM.

4 Restated based on the new emission factor for electricity gridmix in the Netherlands to make like for like comparison with 2020 emission figures possible

Table 10: Circular information on reuse, recycling and disposal

Total outflow	Unit	Target 2021	Target 2020	Result 2020	Result 2019 ¹	Result 2018	Result 2017
Total volume non-hazardous materials & waste²	ton			7,803	6,863	6,494	5,344
Reuse	ton			1,018	561	497	347
Recycling	ton			5,263	4,780	4,490	3,203
Incineration	ton			1,397	1,366	1,359	1,644
Landfill	ton			125	156	148	150
Total volume hazardous materials & waste	ton			367	190	105	56
Reuse	ton			1	-	-	-
Recycling	ton			295	148	75	53
Incineration	ton			62	39	20	3
Landfill	ton			9	3	10	-
Total volume	ton			8,170	7,053	6,599	5,400
% Reuse	%			12%	8%	8%	6%
% Recycling	%			69%	70%	69%	61%
% Reuse and Recycling²	%	82%	79%	81%	78%³	77%	67%
% Incineration	%			17%	20%	21%	30%
% Landfill	%			2%	2%	2%	3%
Collected equipment							
Modems and TV settop boxes	%	85%	80%	92%⁴	74%⁵	67%	69%
Mobile phones	%			4%	5%	6%	6%

1 2019 volumes restated due to 2019 data received with delay in 2020 (368 tons).

2 Results 2017-2019 have been restated due to improved calculation method and performance of post-incineration recycling of residual waste.

3 Result also restated due to restated volumes.

4 Increase to 92% due to increased attention on collection of equipment by service engineers and returns by customers.

5 Restated from 78% to 74% due to scoping to KPN owned equipment.