

Additional CSR data

CSR data linked to
Integrated Annual Report

2018

Introduction

In this additional CSR data document, we provide more details on the 2018 CSR performance of TenneT. Together with over 3,400 employees, either working in one of our 8 offices in Germany and the Netherlands or at other locations, we aim to secure supply of energy for society and strive to make responsible choices in doing so. In our integrated annual report 2018 we report about the topics that are considered to be most relevant to our internal and external stakeholders taking the TenneT Holding perspective, prepared in accordance with sustainability guidelines defined by the Global Reporting Initiative Standards. The materiality process is fundamental to integrated reporting as it ensures we meet the level of transparency our stakeholders have the right to expect. The outcome of the materiality analysis is presented in the GRI content index, for more information, please go to the [CSR section of our website](#).

Our CSR policy and activities are broader and are not limited to the outcome of the materiality analysis. Therefore additional CSR data is reported in this document, to provide additional information of the progress of TenneT regarding the people and planet ambitions we have set ourselves in the CSR ambition plan 2025.

In our integrated annual report, most of our data is presented at TenneT Holding level. To give more insight in our operations, KPIs in this document are presented on TenneT Holding level and country level. We have presented the data in line with the structure of the integrated annual report.

For definitions of the reported KPIs please go to the [CSR section of our website](#).

In case there any additional questions considering CSR reporting, please send an email to CSR@tennet.eu.



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1. Strategic performance

1.1 Stakeholder dialogues

It is crucial that we connect with local communities, NGOs and politicians from the earliest stages of a project to address their concerns and gain their acceptance. It is our experience that stakeholder dialogue works best on a small scale, with a tailored approach.

In the table below the number of public events are presented.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Number of stakeholder dialogues	279	459	738	114	642	756	83	88	171

1.2 Grid availability

TenneT's track record in grid availability is among the best in the world. We work hard to guarantee a reliable electricity grid, a task that is complicated by the volatility of renewable energy, which makes it harder to balance supply with the rising demand. In the table below our onshore grid availability is presented.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Grid availability	99.9988%	99.9958%	99.9988%	99.9986%	100.0000%	99.9986%	99.9999%	100.0000%	99.9999%
110/150 kV									
Interruptions	16	N/A	16	11	N/A	11	6	N/A	6
Energy not transported	1,184	N/A	1,184	1,072	N/A	1,072	59	N/A	59
220/380 kV									
Interruptions	-	1	1	-	-	-	-	-	-
Energy not transported	-	60	60	-	-	-	-	-	-

Our total grid availability (ASAI) is reported as the sum of the availability on the national grids, thereby underestimating the availability for TenneT as a whole.

The industry has defined two standard KPIs for grid availability reporting. The SAIDI (System Average Interruption Duration Index) is the average outage duration for each customer served. The ASIDI (Average System Interruption Duration Index) is the average outage duration for interrupted active power flow. Since 2017 TenneT reports according to GRI Standards, which requires more extensive reporting on the identified materials themes. For grid availability this means the SAIDI and ASIDI are reported from 2017.

	2018		2017	
	NL	D	Total	NL
SAIDI				
110/150 kV	5.50	N/A	8.44	N/A
220/380 kV	-	N/A	-	N/A
ASADI				
110/150 kV	N/A	N/A	N/A	N/A
220/380 kV	-	0.06	-	-



1.3 Technical data

TenneT maintains and build asset infrastructure to transport electricity. Our assets by type of asset and voltage level are presented in the table below.

Technical data	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Number of substations:									
110/150 kV	289	5	294	288	5	293	287	5	292
220/380 kV	45	123	168	45	124	169	42	124	166
Total number of substations	334	128	462	333	129	462	329	129	458
HVDC converter stations	2	16	18	2	14	16	2	14	16
Connected offshore windfarms	-	19	19	-	17	17	-	15	15
Circuit length:									
Underground total	2,185	1,952	4,137	2,140	1,743	3,883	2,106	1,701	3,807
Overhead total	8,166	10,559	18,725	8,112	10,862	18,974	8,113	10,717	18,830
Total	10,351	12,511	22,862	10,252	12,605	22,857	10,219	12,418	22,637
150/300/450 kV DC	420	1,335	1,755	420	1,174	1,594	420	1,174	1,594
220/380 kV	2,986	10,555	13,541	2,939	10,845	13,784	2,912	10,699	13,611
110/150 kV	6,945	621	7,566	6,893	587	7,480	6,887	545	7,432
Total	10,351	12,511	22,862	10,252	12,606	22,858	10,219	12,418	22,637



2. Operational performance – Our people ambition

2.1 Employee data & diversity

Our people are our most valuable asset. They are the key to our continued success and growth. That's why we create a safe, healthy, stimulating and energising place for them to work and empower our people to perform. Over 3,400 employees contribute to our mission to provide a secure and reliable supply of electricity, 24 hours a day, 365 days a year. Next to this, we also make use of contractors, e.g. to help us in realising our projects. We aim to work together with our contractors, for instance when it comes to creating a safe working environment.

In tables below additional data regarding FTE, headcount, permanent/temporary contracts, CAO/function contracts, male/female ratios, age distribution, inflow/outflow, management/non-management, full-time/part-time employees and education costs is presented.

In our CSR ambition plan 2025, we have defined three specific areas of focus: diversity, safety and society. More details on the number of stakeholder engagements can be found on page 3. In the tables below, we provide more insight on our diversity and safety focus areas.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
FTE (end of period)									
FTE internal	1,368	1,903	3,271	1,283	1,788	3,071	1,224	1,707	2,931
FTE external	604	399	1,003	465	301	766	326	216	542
Total	1,972	2,302	4,274	1,748	2,089	3,837	1,550	1,923	3,473

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount (end of period)									
Headcount internal	1,422	1,987	3,409	1,335	1,862	3,197	1,274	1,766	3,040
Headcount external	726	403	1,129	574	297	871	417	214	631
Total	2,148	2,390	4,538	1,909	2,159	4,068	1,691	1,980	3,671

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount (end of period)									
Permanent contract	1,292	1,741	3,033	1,225	1,631	2,856	1,173	1,530	2,703
Temporary contract	130	246	376	110	231	341	101	236	337
Total	1,422	1,987	3,409	1,335	1,862	3,197	1,274	1,766	3,040

	2018			2017		
	NL	D	Total	NL	D	Total
Permanent contract						
Permanent contract male	1,004	1,399	2,403	942	1,318	2,260
Permanent contract female	288	342	630	283	313	596
Total	1,292	1,741	3,033	1,225	1,631	2,856
% male	78%	80%	79%	77%	81%	79%
% female	22%	20%	21%	23%	19%	21%

	2018			2017		
	NL	D	Total	NL	D	Total
Temporary contract						
Temporary contract male	98	154	252	94	166	260
Temporary contract female	32	92	124	16	65	81
Total	130	246	376	110	231	341
% male	75%	63%	67%	85%	72%	76%
% female	25%	37%	33%	15%	28%	24%



The total internal headcount presented in the table below is higher, because it includes interns.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal									
Collective labour contracts	1,230	1,611	2,841	1,168	1,503	2,671	1,119	1,420	2,539
Function contracts	192	216	408	167	210	377	155	204	359
Other contracts	26	160	186	11	149	160	12	142	154
Total	1,448	1,987	3,435	1,346	1,862	3,208	1,286	1,766	3,052

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal gender									
Male	1,102	1,553	2,655	1,036	1,484	2,520	981	1,389	2,370
Female	320	434	754	299	378	677	293	377	670
Total	1,422	1,987	3,409	1,335	1,862	3,197	1,274	1,766	3,040
% male	77%	78%	78%	78%	80%	79%	77%	79%	78%
% female	23%	22%	22%	22%	20%	21%	23%	21%	22%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal by age									
Under 20 years	-	33	33	-	35	35	-	40	40
20-30 years	84	392	476	71	382	453	62	402	464
30-40 years	316	702	1,018	300	660	960	314	591	905
40-50 years	475	418	893	450	382	832	417	363	780
50-60 years	424	360	784	403	328	731	355	304	659
Over 60 years	123	82	205	111	75	186	126	66	192
Total	1,422	1,987	3,409	1,335	1,862	3,197	1,274	1,766	3,040

Interns are not part of the in- and outflow figures reported below.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal inflow									
Male	122	110	232	91	111	202	69	110	179
Female	35	55	90	17	26	43	23	33	56
Total	157	165	322	108	137	245	92	143	235
% male	78%	67%	72%	84%	81%	82%	75%	77%	76%
% female	22%	33%	28%	16%	19%	18%	25%	23%	24%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal outflow									
Male	57	46	103	36	45	81	45	35	80
Female	13	13	26	11	18	29	21	19	40
Total	70	59	129	47	63	110	66	54	120
% male	81%	78%	80%	77%	71%	74%	68%	65%	67%
% female	19%	22%	20%	23%	29%	26%	32%	35%	33%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal management									
Male	97	47	144	99	50	149	94	45	139
Female	24	3	27	20	3	23	22	3	25
Total	121	50	171	119	53	172	116	48	164
% male	80%	94%	84%	83%	94%	87%	81%	94%	85%
% female	20%	6%	16%	17%	6%	13%	19%	6%	15%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal non-management									
Male	1,005	1,506	2,511	937	1,434	2,371	875	1,344	2,219
Female	296	431	727	279	375	654	271	374	645
Total	1,301	1,937	3,238	1,216	1,809	3,025	1,146	1,718	2,864
% male	77%	78%	78%	77%	79%	78%	76%	78%	77%
% female	23%	22%	22%	23%	21%	22%	24%	22%	23%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal full-time									
Male	1,010	1,476	2,486	951	1,416	2,367	903	1,343	2,246
Female	116	307	423	113	275	388	116	292	408
Total	1,126	1,783	2,909	1,064	1,691	2,755	1,019	1,635	2,654
% male	90%	83%	85%	89%	84%	86%	89%	82%	85%
% female	10%	17%	15%	11%	16%	14%	11%	18%	15%



	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Headcount internal part-time									
Male	92	77	169	85	68	153	78	46	124
Female	204	127	331	186	103	289	177	85	262
Total	296	204	500	271	171	442	255	131	386
% male	31%	38%	34%	31%	40%	35%	31%	35%	32%
% female	69%	62%	66%	69%	60%	65%	69%	65%	68%

	2018		
	NL	D	Total
Newly hired femals at management level	30%	27%	29%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	NL
Average education costs per employee	34.000	11.050	15.100	2.246	2.092	2.157	2.354	2.011	2.155

2.2 Employee engagement & open dialogue

Periodically, we perform employee engagement surveys to measure levels of engagement and satisfaction. In 2018, we did not perform this survey, therefore we have no new figures to report. For more information on the previous survey, refer to previous CSR data documents on our website.

Furthermore, we value an open dialogue with our employees and encourage them to report potential issues regarding integrity and undesirable behaviour.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	NL
Formal complaints	7	11	18	28	-	28	40	-	40
Of which whistle-blower cases	-	2	2	-	-	-	-	-	-

2.3 Remuneration

We reward our employees for their work by offering an appropriate package of salary, pension and secondary benefits. To illustrate the difference in remuneration between the highest full-time salary and median fulltime salary at TenneT, we have calculated the ratio of fixed salary (including acquired leave days), variable remuneration and pension benefits.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	NL
Ratio CEO to median	5.5	5.6	5.6	7.1	7.6	7.5	7.1	6.9	7.0

2.4 Safety

The safety of everyone involved in our activities – our employees and our contractors – is a top priority. We continually strive for zero work-related incidents and accidents. Our goal is to become a safety leader and to have a pro-active safety culture. We aim to be recognised as such by our own employees as well as by our stakeholders. Our safety performance is presented in the table below.

Since 2017 TenneT reports according to GRI Standards, which requires more extensive reporting on the identified materials themes. For safety this means we report our safety statistics per country and total starting 2016.



	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
LTIF	1.0	3.1	2.4	1.3	3.3	2.5	2.1	3.1	3.6
TRIR	1.3	4.1	3.1	1.8	4.1	3.3	3.5	5.7	4.9
HRI	19	30	49	7	16	23	10	14	24
Fatalities	-	-	-	-	-	-	1	-	1
Investigation index	100%	100%	100%	100%	100%	100%	100%	100%	100%

2.5 Health

We help our people to live healthy and active lives, and find a stimulating work-life balance. We offer coaching to our employees in the Netherlands and encourage all employees to join our Committed Power sports programme. The programme is open to employees and their partners and provides training and medical supervision to undertake a challenging activity, such as biking, Nordic walking, running or skating.

	2018		2017		2016	
	NL	D	NL	D	NL	D
Sickness rate (%)	3.00%	3.00%	2.90%	3.00%	3.70%	2.90%

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Biking	49	16	65	125	51	176	104	65	169
Biking MTB	16	29	45	55	61	116	-	-	-
Nordic Walking	58	24	82	96	62	158	62	65	127
Running	239	233	472	109	61	170	232	208	440
Skating	-	-	-	40	8	48	-	-	-
Total	362	302	664	425	243	668	398	338	736



3. Operational performance – Our planet ambition

3.1 Climate

We present our gross CO₂ footprint for 2018, 2017 and 2016 in three scopes: direct emissions from our own operations; indirect emissions related to purchased energy; and indirect emissions related to other purchased goods. Our net carbon footprint takes our measures to green our electricity use into account, resulting in a lower carbon footprint. Our calculations are based on the CO₂ Footprint Network Operators Manual, of the Association of Energy Network Operators in the Netherlands, CO₂emissiefactoren.nl and document "Entwicklung der spezifischen Kohlendioxid- Emissionen des deutschen Strommix in den Jahren 1990 bis 2017". The detailed carbon footprint of 2018 is presented below, which includes since 2017 the helicopter and vessel transport to our offshore platforms. The 2017 and 2016 figures can be found in the appendix.

2018						
Scope 1		conversionfactor			emission in ton CO2e	net emissions in ton CO2
Lease						
480,822	km	DE	0.000181	ton CO2/km	87	87
-	km	NL	0.000181	ton CO2/km	5,445	5,445
Total Lease					5,532	5,532
Gas use offices						
4.43	GWh	DE	179.1	tonnes CO2e/GW	793	793
126,474.18	m3	NL	0.001791	ton CO2e/m3	227	-
Total energy use office					1,020	793
SF6 leakage						
463.00	kg	DE	23.5	ton CO2e/kg SF6	10,881	10,881
606.00	kg	NL	23.5	ton CO2e/kg SF6	14,241	14,241
Total SF6 leakage					25,122	25,122
Total Scope 1					31,673	31,447
Scope 2						
Electricity use offices						
3.49	GWh	DE	248	tonnes CO2e/GW	866	866
6.23	GWh	NL	572	tonnes CO2e/GW	3,561	-
Total Electricity use offices					4,426	866
Grid losses						
3,894.00	GWh	DE	489	tonnes CO2e/GW	1,904,166	1,904,166
1,146.20	GWh	NL	572	tonnes CO2e/GW	655,626	-
Total grid losses					2,559,792	1,904,166
Electricity use stations						
176	GWh	DE	489	tonnes CO2e/GW	86,054	86,054
20	GWh	NL	572	tonnes CO2e/GW	11,311	-
Total Electricity use stations					97,365	86,054
Total Scope 2					2,661,584	1,991,086
Scope 3						
Business and commute						
18,816,692	km	DE	0.000181	ton CO2/km	3,406	3,406
14,494,221	km	NL	0.000181	ton CO2/km	2,623	2,623
Total business and commute					6,029	6,029
Air travel						
5,474,568	km	DE	0.000278	ton CO2/km	1,522	1,522
2,926,069	km	NL	0.000278	ton CO2/km	813	813
Total air travel					2,335	2,335
Train						
4,341,889	km	DE	0.000005	ton CO2/km	22	22
1,916,132	km	NL	0.000005	ton CO2/km	10	10
Total Train					31	31
Offshore transport						
Helicopters						
446,886	l	DE	0.00354	ton CO2/l	1,582	1,582
Supply vessels						
1,579,500	l	DE	0.00292	ton CO2/l	4,612	4,612
Total offshore transport					6,194	6,194
Total Scope 3					14,590	14,590
Total					2,707,847	2,037,122



Grid losses

Over 90% of TenneT's carbon footprint is due to grid losses. Grid losses are calculated as the difference between the amounts of electricity produced entering our transmission system and the amount that leaves our system for consumption. The grid losses presented per country and voltage level can be found in the table below.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
110/150 kV									
Grid losses (GWh)	167	N/A	167	424	N/A	424	410	N/A	410
Transported GWh	27,020	N/A	27,020	93,657	N/A	93,657	91,860	N/A	91,860
% grid losses of transported GWh	0.62%	N/A	0.62%	0.45%	N/A	0.45%	0.45%	N/A	0.45%
220/380 kV									
Grid losses (GWh)	979	3,894	4,873	931	3,724	4,655	808	2,994	3,802
Transported GWh	81,046	168,110	249,156	79,069	159,401	238,470	79,951	145,178	225,129
% grid losses of transported GWh	1.21%	2.32%	1.96%	1.18%	2.34%	1.95%	1.01%	2.06%	1.69%
Total grid losses (GWh)	1,146	3,894	5,040	1,355	3,724	5,079	1,218	2,994	4,212

SF₆ leakage

SF₆ is used in high-voltage equipment on substations because it is an excellent electrical insulator and is necessary for interrupting currents in circuit breakers. However, SF₆ is a strong contributor to greenhouse gas emissions. Below the leaked and banked amounts are reported.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
SF ₆ leaked (kg)	606	463	1,069	819	115	934	1,087	161	1,248
SF ₆ banked (kg)	162,151	197,954	360,105	146,648	190,186	336,834	144,907	182,348	327,255
SF ₆ leaked %	0.37%	0.23%	0.30%	0.56%	0.06%	0.28%	0.75%	0.09%	0.38%

3.2 Circularity

In our CSR ambition plan 2025, we have included our ambition to minimize use of scarce materials, reusing materials and reducing waste in our operations. To this extent, we are currently working on obtaining more insights in the materials we use by means of obtaining material passports from our suppliers and identifying all sources of waste. This will provide us with insights to set the basis for our reference year 2020 for our target to reduce both the use of virgin copper, as well as non-recyclable waste with 25% by 2025.

3.3 Nature

Environmental incidents

With our operations we have undoubtedly impact on nature. We recognise that we have a responsibility to care for the well-being of the natural environment, and are therefore transparent about the oil leakages and environmental incidents caused by our actions.

	2018			2017			2016		
	NL	D	Total	NL	D	Total	NL	D	Total
Oil Leaked (litres)	954	5,425	6,379	6,849	11	6,860	1,710	377	2,087
Environmental incidents	28	27	55	28	16	44	26	32	58



Areas managed in regions of high biodiversity

The majority of TenneT's lines and cables are outside regions with high biodiversity, since these areas are protected by national and international laws. However, some of our infrastructure does cross areas of high biodiversity and below we report the surface areas managed in protected natural areas in the Netherlands and Germany.

Since different types of natural areas overlap, for instance protected bird and habitat areas, the sum of protected areas does not sum up to the total. We aim to collect this data regarding our nature ambition on a periodical basis. The most recent data is collected in 2016, or updated more recent where stated otherwise.

Type of natural protected area Netherlands	Surface area managed in protected area (km ²)
Total forest and heather	11,6
Total Natura 2000	6,2
Bird guideline area	5,1
Habitat guideline area	4,1
Protected natural area's	0,7
Type of natural protected area Germany	Surface area managed in protected area (km ²)
Natura 2000 (Bird, Habitat and Flora and Fauna areas)	13,1
Nature conservation areas	6,5
National parks	1,7
Natural parks	63,3
Biosphere reserves	2,3
Special protection area (Birds Directive)	17,4
Wadden Sea World Heritage property	1,6
Ramsar Convention	1,2
Total area (without overlap)	85,8

Use of herbicides

Because of the nature of our operations, operating high voltage infrastructure, mechanically weeding is not always possible. For that reason we make use of herbicides to control plant growth and avoid dangerous situations. For some of the herbicides that are banned on a national level due to risks of application, we have an exception as no reasonable alternatives are available. Herbicides are only used in a limited number of areas, since a permit from the state's agricultural chamber is necessary.

Below the use of herbicides in 2017 in the Netherlands and Germany is reported.

Herbicide	Netherlands	Germany
Round-up/ Glyphos/ TOUCHDOWN (liters)	564.5	11
U 46 MCPA (liters)	249.5	
Basta (liters)	0	
Finalsan Plus (kg)	0	428
Toki/Nozomi (kg)	14	
PROMOTOR (liters)	107.5	
Genoxone ZX (liters)	12	
Dicophar (liters)	50	



Partnerships and collaborations

Our Commitment to Nature vision underlines our approach and illustrates the responsibility we feel we have to avoid and minimise our environmental impact and protect and improve local nature. We always strive to balance our business activities with the impact they have on nature. Since stakeholder cooperation is crucial in making sure we come up with the best solution for nature we work together with several partners.

Partner	Logo	Description	Year
Energy cooperation in the North Sea: NOGEPA, NWEA, TNO, TenneT en Stichting Natuur & Milieu		Dutch offshore North Sea oil and gas operators, the offshore wind sector and NGO's, have joined forces and declare that they will collaborate in order to contribute to a safe, sustainable, reliable and affordable energy system in balance with improving eco-systems.	2016
St. de Noordzee		In collaboration with St. de Noordzee a positive impact of the Dutch offshore activities in the Netherlands on marine biodiversity is pursued. Stichting de Noordzee and TenneT together gather academics to open a discussion on the possibilities to improve nature and biodiversity in the North sea.	2016
Green Deal Infra-nature		Via the Green Deal, an instrument from the Dutch ministries to progress sustainability, we are able to: <ul style="list-style-type: none"> • learn from the experience of other companies • create a relevant network with Ministries, NGO's and similar infrastructure companies. • set up a joint lobby for biodiversity related issues. The Ministry of Economic Affairs for example, wants to look upon a solution for the regulatory issues related to biodiversity. 	2016
Natuur & Milieu		We signed a partnership agreement with Natuur & Milieu in October 2014 for 'Wind op Zee' (NL). Natuur & Milieu is coordinating the input for the EIA procedure for Wind op Zee.	2014
Cigre, workgroup corridor management		Cigre is an international non-profit association for promoting collaboration with experts from all around the world by sharing knowledge and joining forces to improve electric power systems of today and tomorrow. One of the working groups focusses on biodiversity and landscape to have effective corridor management.	
Best Grid / Renewables Grid Initiative (RGI)		Cooperation with a local NGO to analyse how to connect biotopes via power lines 2014-2015 – Partner was the Renewables Grid Initiative and NABU lower Saxony.	2014
NABU (German BirdLife), under Best Grid		For the project SuedLink, TenneT is cooperating very closely with the regional branch of NABU (German BirdLife) in Lower Saxony. Since 2017, we have agreed with other TSOs and the NABU (Naturschutzbund Deutschland) to set-up a bird hot line. People that find a dead bird in the vicinity of our lines can call this line, managed by the NABU, which keeps a register. The information will be used to change the type of bird flaps we use and potentially help us design new lines that are safer for birds in the future.	2014
The European Grid Declaration on Electricity Network Development and Nature Conservation		Under the RGI, a coalition of 24 organisations, including nine of Europe's largest TSOs, and NGOs such as WWF, Greenpeace, Birdlife International and Friends of the Earth Europe, work together.	2011



Appendix

2017

Scope 1						
				conversionfactor	emission in ton CO ₂	net emissions in ton CO ₂
lease						
417,109	km	DE	0.000181	ton CO ₂ /km	75	75
	km	NL	0.000181	ton CO ₂ /km	5,092	5,092
Total lease					5,167	5,167
gas use offices						
4.01	GWh	DE	178.80	tonnes CO ₂ e/GWh	717	717
124,281.00	m ³	NL	0.001788	ton CO ₂ e/m ³	222	-
Total gas use offices					939	717
SF ₆ leakage						
114.85	kg	DE	23.90	ton CO ₂ e/kg SF ₆	2,745	2,745
819.00	kg	NL	23.90	ton CO ₂ e/kg SF ₆	19,574	19,574
Total SF₆ leakage					22,319	22,319
Total Scope 1					28,426	28,203
Scope 2						
electricity use offices						
5.26	GWh	DE	327	tonnes CO ₂ e/GWh	1,720	1,720
4.96	GWh	NL	572	tonnes CO ₂ e/GWh	2,837	-
Total electricity use offices					4,557	1,720
grid losses						
3,724.00	GWh	DE	527	tonnes CO ₂ e/GWh	1,962,548	1,962,548
1,355.60	GWh	NL	572	tonnes CO ₂ e/GWh	775,403	-
Total grid losses					2,737,951	1,962,548
electricity use in stations						
168.70	GWh	DE	527	tonnes CO ₂ e/GWh	88,905	88,905
19.32	GWh	NL	572	tonnes CO ₂ e/GWh	11,051	-
Total electricity use in stations					99,956	88,905
Total Scope 2					2,842,464	2,053,173
Scope 3						
business and commute						
17,687,124	km	DE	0.000181	ton CO ₂ /km	3,201	3,201
13,800,456	km	NL	0.000181	ton CO ₂ /km	2,498	2,498
Total business and commute					5,699	5,699
air travel						
4,697,483	km	DE	0.000278	ton CO ₂ /km	1,306	1,306
2,942,113	km	NL	0.000278	ton CO ₂ /km	818	818
Total air travel					2,124	2,124
train						
4,307,763	km	DE	0.000005	ton CO ₂ /km	22	22
1,340,288	km	NL	0.000005	ton CO ₂ /km	7	7
Total train					28	28
Offshore transport						
Helicopters						
567,812	l	DE	0.002270	ton CO ₂ /l	1,289	1,289
Supply vessels						
1,579,500	l	DE	0.002920	ton CO ₂ /l	4,612	4,612
Total Offshore transport					5,901	5,901
Total Scope 3					13,752	13,752
Total					2,884,642	2,095,129
					ton CO ₂ e	ton CO ₂ e



2016

Scope 1						
				conversionfactor	emission in ton CO ₂	net emissions in ton CO ₂
lease						
412,870	km	DE	0.000181	ton CO ₂ /km	75	75
14,486,000	km	NL	0.000181	ton CO ₂ /km	2,622	2,622
Total lease					2,697	2,697
gas use offices						
4.01	GWh	DE	178.80	tonnes CO ₂ e/GWh	717	717
113,680.00	m ³	NL	0.001788	ton CO ₂ e/m ³	203	-
Total gas use offices					920	717
SF ₆ leakage						
161.34	kg	DE	23.90	ton CO ₂ e/kg SF ₆	3,856	3,856
1,086.76	kg	NL	23.90	ton CO ₂ e/kg SF ₆	25,974	25,974
Total SF₆ leakage					29,830	29,830
Total Scope 1					33,447	33,243
Scope 2						
electricity use offices						
5.26	GWh	DE	327	tonnes CO ₂ e/GWh	1,720	1,720
4.59	GWh	NL	464	tonnes CO ₂ e/GWh	2,131	-
Total electricity use offices					3,851	1,720
grid losses						
2,994.44	GWh	DE	527	tonnes CO ₂ e/GWh	1,578,070	1,578,070
1,217.90	GWh	NL	464	tonnes CO ₂ e/GWh	565,106	-
Total grid losses					2,143,175	1,578,070
electricity use in stations						
168.70	GWh	DE	527	tonnes CO ₂ e/GWh	88,905	88,905
19.66	GWh	NL	464	tonnes CO ₂ e/GWh	9,124	-
Total electricity use in stations					98,029	88,905
Total Scope 2					2,245,055	1,668,695
Scope 3						
business and commute						
16,358,971	km	DE	0.000181	ton CO ₂ /km	2,961	2,961
12,624,408	km	NL	0.000181	ton CO ₂ /km	2,285	2,285
Total business and commute					5,246	5,246
air travel						
4,652,813	km	DE	0.000278	ton CO ₂ /km	1,293	1,293
3,067,700	km	NL	0.000278	ton CO ₂ /km	853	853
Total air travel					2,146	2,146
train						
3,511,201	km	DE	0.000005	ton CO ₂ /km	18	18
1,230,453	km	NL	0.000005	ton CO ₂ /km	6	6
Total train					24	24
Offshore transport						
Helicopters						
-	l	DE	-	ton CO ₂ /l	-	-
Supply vessels						
-	l	DE	-	ton CO ₂ /l	-	-
Total Offshore transport					-	-
Total Scope 3					7,416	7,416
Total					2,285,918	1,709,354
					ton CO ₂ e	ton CO ₂ e