

EMAS Environmental Statement 2019

Hannover Rück SE,
E+S Rückversicherung AG and
HDI Global Specialty SE
for the Hannover location



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Jean-Jacques Henchoz,
Chairman of the Executive Board

Ladies and Gentlemen,

This publication is our second EMAS Environmental Statement – and the first one for which I am taking responsibility in my new role as Chief Executive Officer of Hannover Re.

As a globally operating reinsurer, we have long been intensely concerned by the advance of climate change and what it means in terms of damage, losses and new realities going forward – whether on the economic, environmental or social level. After all, the effects are felt directly by our customers, their customers and us. The issues of climate protection and climate change are central challenges facing society and also have direct implications for our commercial activities.

In contrast to manufacturing companies, the environmental impacts of our operations are relatively slight. Nevertheless, we consider it very important to send out an appropriate signal:

In our Sustainability Strategy 2018–2020 we define specific environmental goals and measures. We have been operating with a net zero carbon footprint at our location in Hannover since 2016. By implementing more extensive measures, on which we report in this Environmental Statement and also in our sustainability publications, we have since gone on to further improve our environmental performance here.

In 2018 we began to extend these environmental efforts to our other locations as well. It is already the case that we have offset all CO₂ emissions caused through air travel at our German locations since as long ago as 2008. Starting last year, we are now also recording the emissions associated with plane travel undertaken by our locations in the Asia-Pacific region and paying carbon offsets for them. In addition, we are working to progressively change over the power consumed by our international locations to energy from renewable sources, just as we have already done in Germany.

In our investing activities we have observed environmental, social and governance (ESG) criteria since 2011 as part of our “Responsible Investment Policy”. We take our lead here from the ten principles of the United Nations Global Compact, which addresses important issues relating to human rights, working conditions, the environment and fighting corruption. We avoid exposures to issuers involved in the manufacture and proliferation of controversial weapons.

Turning to fossil fuels, since 2018 we have excluded issuers that generate 25% or more of their revenues from coal mining or coal-fired power generation. In the current financial year we extended these exclusions to our facultative underwriting business and, with a few rigorously verified exceptions, no longer reinsure any planned new coal-fired power plants or coal mines. Furthermore, we are currently working towards a phased withdrawal from the coverage of coal-based risks in our entire property and casualty reinsurance portfolio by the year 2038.

Hannover Re and I, personally, stand behind the targets for a low-carbon economy that were agreed upon by governments from 195 countries under the Paris Agreement of 2015 as a response to the threat of climate change. With this in mind, we are all the more gratified by your interest in our company and in this report.

We would be delighted to engage in a frank and open dialogue with you.

Yours sincerely,



Jean-Jacques Henchoz
Chairman of the Executive Board of Hannover Rück SE

1. About us

1.1 Our workplace: worldwide

Hannover Rück SE was established in 1966 and today ranks as the third-largest reinsurer in the world with gross premium of EUR 19.2 billion. We have a network of more than 170 subsidiaries, affiliates, branches and representative offices worldwide with a total workforce of 3,317 (valid: 31 December 2018).

In addition to our headquarters in Hannover (43% of the workforce), our principal locations are South Africa, the United Kingdom, the United States and Sweden.

The long-standing principal shareholder of Hannover Re is Talanx AG, which in turn is majority-owned by “Haftpflichtverband der Deutschen Industrie” (HDI). As a mutual insurance company, HDI’s focus on commercial success over the long term makes a positive contribution to sustainable value creation.

The proportion of shares in the free float as at the reference date of 31 December 2018 was altogether 49.8%, with 8.9% attributable to private investors and 40.9% to institutional investors.

Our subsidiary E+S Rückversicherung AG (E+S Rück), as the “dedicated reinsurer for the German market”, offers a range of products and services tailored to the specific features of the German market. Of special importance here are the mutual insurers with whom we maintain a strategic partnership that is underscored through their participation in E+S Rück. We transact primary insurance in selected market niches to complement our core reinsurance activities. In this context, we always work together with partners from the primary insurance sector. Effective 1 January 2019 a majority stake in Inter Hannover SE was sold to HDI Global SE and the company was merged into HDI Global Specialty SE. This company continues to use the premises and infrastructure services of the building at Roderbruchstraße 26. HDI Global Specialty SE also retains the environmental management system operated by Hannover Re and an appropriate agreement has been reached in this regard.

The Hannover Re Group’s portfolio is split into the strategic business groups of Property & Casualty and Life & Health reinsurance. Of the total gross premium written in 2018, 62.5% was attributable to Property & Casualty reinsurance and 37.5% to Life & Health reinsurance.

The contents of this report refer to Hannover Rück SE, E+S Rückversicherung AG and HDI Global Specialty SE (Inter Hannover SE) at the Hannover location, with the premises listed in section 1.2. The companies reporting here are referred to below as Hannover Re.

1.2 Our location: Hannover

The headquarters of Hannover Re, E+S Rückversicherung AG and HDI Global Specialty SE is located in the Groß-Buchholz district of Hannover.

Along with the market departments, the major core competencies of Business Opportunity Management and Risk Management, Controlling, Finance and Accounting, Information Technology, Investments, Human Resources Management, Legal and Compliance, Group Auditing, Corporate Development and Corporate Communications as well as Facility Management are all based at the Hannover location.

The three companies employed a total workforce of 1,434 at the Hannover location as at 31 December 2018; they operate a joint environmental management system under uniform senior management and an environmental management officer.

The support association Hannover ReKids e. V. continues to operate an infant daycare centre at the Hannover location for the children of employees at the aforementioned companies. The consumption and waste data are recorded in this environmental statement for the first time.

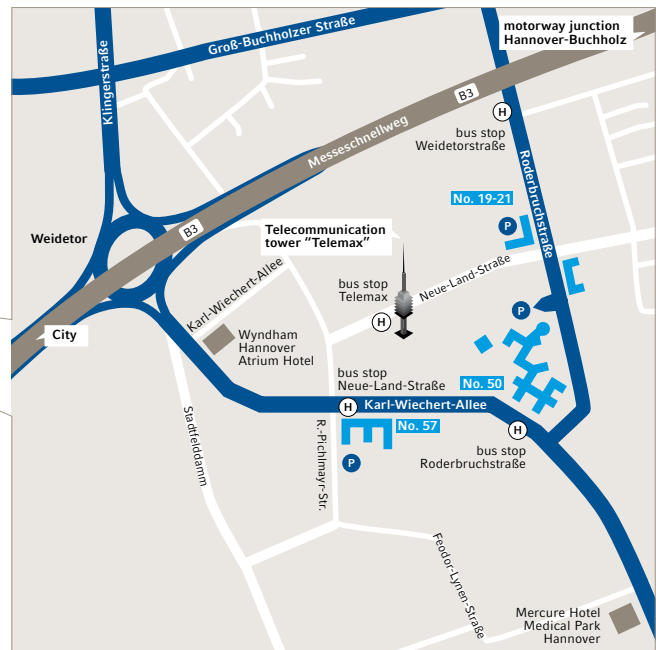
The location encompasses five buildings in the immediate vicinity of one another. The three companies use these buildings and their infrastructure on a joint basis. It is not possible to allocate the companies to individual premises.

All five buildings were constructed between 1984 and 2008, have a primary energy requirement of between 52 und 65 kWh/(m²*a) and are efficiently heated with district heating provided by the local utility company enercity.






The total floor space of all the buildings amounts to altogether 55,155 m², of which 2,109 m² is leased to outside companies.

In two buildings we operate our own kitchens and equipment for the emergency power supply.

Our Facilities Management division is responsible for technical operations and management of the properties.



Our premises:

-  Headquarters
Karl-Wiechert-Allee 50
30625 Hannover
-  Roderbruchstraße 26
30655 Hannover
-  Karl-Wiechert-Allee 57
30625 Hannover
-  Infant daycare centre
Hannover ReKids e. V.
Roderbruchstraße 35
30655 Hannover
-  Roderbruchstraße 19–21
30655 Hannover

2. Environmental policy

The voluntary commitment made by our company to environmental conservation forms the basis of our environmental management system. Our stated objective is to keep the adverse environmental impacts of our business activities to a minimum.

The environmental policy is an integral component of our Sustainability Strategy. In this context, within the action field of “Environment and Society”, we put the focus of our efforts on reducing CO₂ emissions caused by our business travel and the supply of electricity and heat to our premises. In addition, we do our utmost to ensure the economical and resource-saving use of materials and raw materials such as paper and water and to reduce waste quantities.

Within the scope of our procurement activities we pay close attention to compliance with social and environmental standards when it comes to choosing products and selecting our suppliers.

Our reinsurance offerings are geared to the needs of the market and our clients. In view of changing social challenges, we shall increasingly offer products designed to protect against emerging economic, social and ecological risks. We attach special importance to protection against risks associated with climate change as well as insurance coverage for socially vulnerable groups.

The responsible management of our investments is a high priority. In the interests of our clients, institutional investors and private investors, our investment strategy strives to generate a commensurate market return. Our responsibility in this connection is also reflected in the incorporation of environmental, social and governance (ESG) criteria into our investment policy.

In the context of our environmental management we are dedicated to continuous improvement as well as compliance with all applicable legal obligations and other requirements.

Our Sustainability Strategy is accessible to all employees. The active involvement of all employees in our environmental management system assures effective implementation and attainment of our environmental goals.

In addition, we cultivate an open dialogue with our stakeholders and take account of their legitimate interests.

Our environmental policy is evaluated at regular intervals. This is done as part of the management review.

Further information

www.hannover-re.com/sustainability

3. Selected environmental measures

Along with numerous other measures which in their entirety serve to improve our environmental performance, we have highlighted several flagship projects below.

2008

- Since 2008 Hannover Re has compensated for all CO₂ emissions caused by business flights by paying carbon offsets to the climate protection organisation atmoSFair. The contributions are used to support climate protection projects worldwide, and especially in developing countries.

2012

- In order to conserve the energy used to cool our data centre, we have successively raised the temperature in our server rooms to the current level of 26 degrees. Conservative estimates indicate that in so doing we have reduced the electricity consumption needed to cool the server rooms by around 5%, or some 50,000 kilowatt hours (kWh), since 2012.
- At the beginning of 2012 we switched our electricity supply to 100% renewables and have since used exclusively hydroelectric power from our local energy provider. In this way, we are avoiding the release of at least 3,000 tonnes of CO₂ emissions into the environment.
- We began screening our investments based on individual ESG criteria that we developed in cooperation with a service provider specialising in sustainability. Since mid-2012 almost 90% of Hannover Re's investments have been subject to half-yearly negative screening.
- Our environmental management system was certified for the first time according to DIN ISO 14001.

2013

- Since 2013 we have been progressively changing over our lighting systems to LED technology. Based on estimates, we anticipate annual potential savings of 108,000 kWh.

2014

- Commissioning of a 135 kilowatt-peak photovoltaic installation on the roof of the main office building at Karl-Wiechert-Allee 50. In 2017 the photovoltaic system generated 106,151 kilowatt hours of solar energy.
- Energy-efficient modernisation of the office building at Karl-Wiechert-Allee 57 completed and installation of a proactive heating control system from MeteoViva. Adjusted for climate factors, this made it possible to reduce the consumption of district heating at the property by 25% in 2016 compared to 2014.

2015

- Decision by the Executive Board to transition the existing environmental management system to EMAS III (Eco-Management and Audit Scheme).
- Renovation of the catering facilities in the office building at Karl-Wiechert-Allee 57, including refurbishment with the most efficient cooking systems.

2016

- Hannover Re achieves a net zero carbon footprint at the Hannover location for the first time.
- The existing ESG Investment Policy was refined and enhanced with a best-in-class investment approach.

2017

- Renovation of the catering facilities in the office building at Karl-Wiechert-Allee 50, including refurbishment with the most efficient cooking systems.
- Since mid-2017 we have provided targeted support for projects designed to reduce emissions in Rwanda and Nepal through the carbon offsets that we pay to atmosfair.
- In 2017 we handed over operation of our backup data centre, which we had previously handled ourselves, to a professional data centre operator. The “shared” data centre has earned an LEED (Leadership in Energy and Environmental Design) certification level of Platinum and is powered entirely by renewables. The power usage efficiency (PUE) ratio made possible by this relocation is also significantly lower than can be achieved in self-operated facilities. The PUE metric denotes the ratio of the total amount of energy used by a computer data centre to the energy delivered to computing equipment and it thus determines the efficiency of the data centre’s energy usage. This increased efficiency results in a further considerable energy saving.

2018

- The backup data centre of HDI VVaG on the premises of Hannover Re is being dismantled. This means that the rooms used by the former data centre no longer need to be air-conditioned. The cooling systems were taken out of service and removed.
- The existing ESG Investment Policy was expanded through the inclusion of sustainability criteria relating to fossil fuels from 2018 onwards. We exclude issuers that generate 25% or more of their revenues from coal mining or coal-fired power generation. Furthermore, the best-in-class investment approach with positive screening was refined and technically implemented as an additional instrument. The analysis according to ESG criteria encompasses the portfolio that is also subject to negative screening.
- Since the end of 2018 Hannover Re has offered its employees a season pass for local public transportation in the Greater Hannover region on a collective basis. This is subsidised in an amount of 12% by the transport association for the Greater Hannover metropolitan area (GVH) and 25% by Hannover Re.



Cooking with efficient stoves in Rwanda. Supported by Hannover Re’s carbon offsets.

4. Environmental management system

The three companies operate a joint environmental management system. Overall responsibility for system implementation rests with Hannover Rück SE, which has been charged with this role accordingly by E+S Rückversicherung AG and HDI Global Specialty SE. We continuously review our impact on the environment through our environmental management system. The entire Executive Board of Hannover Re takes responsibility for the system.

Our environmental policy is at the heart of our environmental management. It constitutes the foundation on which all further policies and environmental activities are established.

The Executive Board has appointed an Environmental Management Officer to support the accomplishment of our environmental goals. This person is assisted in the implementation of identified measures by an interdisciplinary environmental team.

Our environmental management system meets the requirements of the standard DIN EN ISO 14001:2015. The expectations of all relevant stakeholders are taken into account. On this

basis we identify opportunities, risks and activities for our environmental management. In conformity with the standard, we have compiled all important policies and responsibilities relating to environmental protection at the Hannover location in our Environmental Management Manual, which can be accessed by all employees via our intranet.

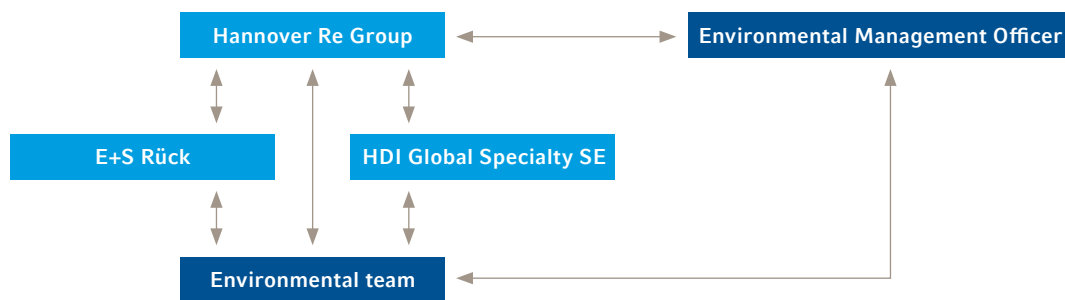
In order to maintain legal certainty, we have drawn up a legal register summarising all laws and regulations of relevance to our environmental management system. In the context of an annual legal review we verify adherence to these laws and regulations and we ensure compliance.

The present EMAS III Environmental Statement, which is updated at yearly intervals, is intended for communication with the public.

We collect and analyse on a regular basis the environmental data relevant to all direct environmental aspects. We use our environmental data to determine measures and responsibilities each year with a view to improving our environmental performance.

The efficiency of our environmental management system is reviewed annually as part of an external audit. This is done by an accredited auditor and a licensed environmental verifier.

Localisation of the environmental management system within the company



5. Environmental aspects

We have identified and evaluated the environmental aspects relevant to our company that have material impacts on the environment. In this context, we differentiate between direct and indirect environmental aspects.

5.1 Direct environmental aspects

Direct environmental aspects are the immediate result of our activities at the Hannover location and can be influenced directly by us. We include here business trips, electricity consumption, heating, refrigerants, paper, waste materials and (waste) water.

Business travel

A considerable number of business trips are needed in order to maintain a presence with our national and international customers. Domestic travel is generally undertaken on a carbon neutral basis by train. Business trips by air account for 96.4% of our CO₂ emissions. Our travel guidelines therefore require us to verify before every trip whether the purpose of the visit could be achieved using communication tools such as conference calls or web conferences. In recent years we have increasingly stepped up our technical capabilities in this regard. Employees of the companies have eight videoconference and telepresence rooms at their disposal in Hannover, which they can use to reach out to colleagues and customers.

Since 2008 we have calculated, controlled and fully compensated for unavoidable CO₂ emissions from business trips through carbon offsets paid to the climate protection organisation atmosfair.

Electricity consumption

Our electricity consumption is crucially determined by our building infrastructure – with the associated lifts, lighting systems and catering facilities. With a view to reducing our CO₂ emissions due to power generation, we have used exclusively electricity from renewable sources since as long ago as 2012. We are thus able to reduce our CO₂ emissions by an amount in the order of 3,000 tonnes per year.

Since 2014 we have also operated a 135 kilowatt-peak photovoltaic system on the roof of the main office building at Karl-Wiechert-Allee 50. In the 2018 financial year 91,950 kilowatt hours of solar power were generated through operation of this installation.

Heating

Our premises are supplied with district heating on an entirely low-carbon basis from the combined heat and power plants of the local utility company enercity. The district heating has a CO₂ emission factor of 91 grams per kilowatt hour. By way of

comparison, the generation of heat from natural gas has a far higher CO₂ emission factor of 201.6 grams per kilowatt hour.

With a view to further optimising our heat consumption, we installed a system for proactive, weather-based management of the heating system in our offices at Karl-Wiechert-Allee 57 in 2015. In order to be able to better assess our heat consumption patterns, we have begun to adjust them so as to allow for weather effects. The consumption of district heating adjusted for weather effects has remained virtually unchanged.

Refrigerants

We require cooling systems to keep our offices cool. These cooling systems are carefully maintained by specialised companies. Recognising that the loss of refrigerants – even in very small quantities – can have an extremely high climate impact, we are careful to ensure that we do not incur any losses of refrigerants.

Paper

In recent years we have systematically reduced our paper consumption. In 2018 we were able to achieve further savings by pressing ahead with the digitalisation of certain working processes.

Waste/recyclable materials

We have been able to continuously reduce our waste quantities by, inter alia, utilising practical multiple-use systems, minimising material consumption (material efficiency) and separating unavoidable waste materials for recovery or disposal.

Proper waste disposal is assured by commissioning suitable service providers and documented through appropriate disposal records.

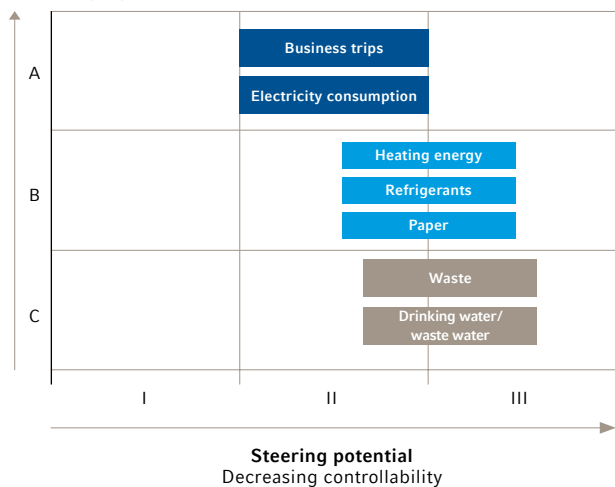
Drinking water/waste water

As a non-manufacturing provider of insurance services, the issue of waste water is of minimal relevance to Hannover Re. We use drinking water for typical domestic purposes and discharge the associated waste water into the municipal sewer network.



Direct environmental aspects

Evaluation of the environmental aspect
Increasing significance



Supplier management

When it comes to procurement we pay close attention to compliance with social and environmental standards in our selection of products and suppliers.

In the context of the supplier selection and evaluation process, we check whether environmental aspects can be taken into account when placing orders for products and services. For the purpose of purchasing products and services we have built up a supplier base that we have surveyed for the existence of an environmental management system.

New suppliers and contractors are evaluated in advance with an eye to their environmental sustainability, for example on the basis of available certifications (EMAS, DIN EN ISO 14001). Hannover Re informs suppliers and contractors about its environmental policy and environmental standards through face-to-face discussions and information letters.

5.2 Indirect environmental aspects

Indirect environmental aspects are aspects that arise indirectly as a consequence of our business activities and over which we can exert no direct influence. We have in mind here impacts in upstream and downstream operations and in the supporting processes. This includes, for example, the environmental impacts caused by suppliers or service providers, by emissions resulting from our employees' commuting to and from work and by the conduct of our reinsurance business and investment management.

Reinsurance business

Our reinsurance offerings are geared to the needs of the market and our clients. In view of changing social challenges, we shall increasingly offer products designed to protect against emerging economic, social and ecological risks. We attach special importance to protection against risks associated with climate change as well as insurance coverage for socially vulnerable groups in developing countries. Coverage concepts for risks resulting from climate change are particularly significant here.

Investment management

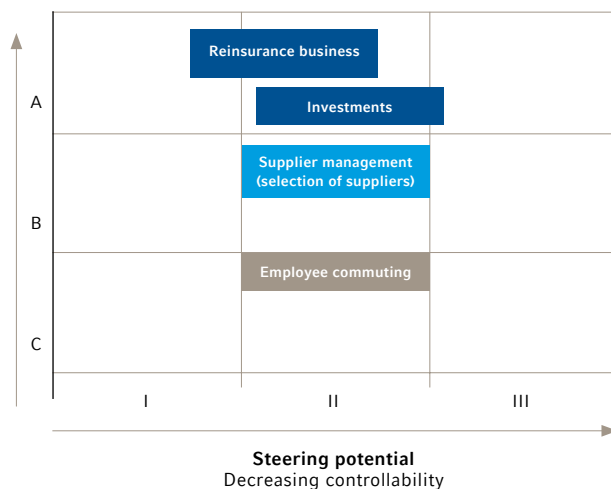
The responsible management of our investments is a high priority. In the interests of our clients and shareholders, our investment strategy strives to generate a commensurate market return. Our responsibility in this connection is also reflected in the incorporation of environmental, social and governance (ESG) criteria into our investment policy. For example, we exclude issuers that generate 25% or more of their revenues from coal mining and coal-fired power generation. Furthermore, the best-in-class investment approach with positive screening was refined and technically implemented as an additional instrument.

Employee commuting

Emissions are also caused when our employees commute to work by car or public transportation. In order to limit these emissions we are proactive in offering our staff teleworking opportunities. We have expanded the availability of bicycle parking for employees who cycle to work and made it more user-friendly. In addition, these employees are provided with adequate change and shower facilities on our premises. Charging cabinets for e-bike batteries will be made available from 2019 onwards. Since the end of 2018 we have partnered with the Hannover regional transport association to offer our employees subsidised travel passes for local public transport.

Indirect environmental aspects

Evaluation of the environmental aspect
Increasing significance



6. Environmental performance

We have compiled below the environmental data relevant to our company, which we have used to determine various key figures. The data will be enhanced in the context of future updates to our Environmental Statement. The calculations for 2018 include for the first time the infant daycare centre ReKids located on company premises.

Employees at the Hannover location

	2018	+/- previous year	2017	2016
Hannover Rück	1,037	+3.4%	1,003	979
E+S Rück	314	-2.5%	322	328
Inter Hannover Germany	75	+25%	60	42
Hannover ReKids	8	-	-	-
Total	1,434		1,385	1,349

Biodiversity at the Hannover location

	2018
in m ²	
Total site area	50,941
Sealed areas	23,114
% of site area	45.4%
thereof green roofs	1,288
% of site area	2.5%

Office space at the Hannover location

	2018	2015–2017
in m ²		
Total office space	55,154.50	54,791.50
thereof leased	2,109.31	1,577.62
Allowable office space	53,045.19	53,213.88
as % of total office space	96.18%	97.12%

6.1 Input

Environmental key figures for the Hannover location

Input	Unit	2018	+/- previous year	2017	2016
Business travel	km	20,363,545	1.21%	20,121,082	20,234,086
	km/employee	14,201	-2.25%	14,528	14,999
Electricity	MWh	7,123.23	-19.32%	8,819.34	8,997.22
	kWh/employee	4,967	-22.07%	6,368	6,669.54
	thereof from RE	100%		100%	100%
District heating	MWh	2,932.68	0.35%	2,922.35	3,073.04
	kWh/employee	2,036	-0.62%	2,049	2,212
	kWh/m ²	53.17	-0.31%	53.34	56.09
	thereof from RE	0%		0%	0%
Drinking water	m ³	13,223	10.30%	11,989	16,551
	m ³ /employee	8.76	4.17%	8.41	11.92
Paper (printers, copiers)	Sheets	4,097,780	-22.94%	5,317,310	5,753,750
	t	19	-24.00%	25	27
	Sheets/employee	2,858	-25.57%	3,839	4,265
	kg/employee	13.25	-26.60%	18.05	20.01
Refrigerants		0	0	0	0

RE: Renewable energy

The total energy consumption for electricity and district heating was reduced by 14.36% in 2018 to 10,056 MWh (previous year: 11,742 MWh).

The refrigerants used were not refilled.

6.1.1 Business trips

With a total distance travelled of 20,363,545 kilometres, business trips are the most significant direct environmental aspect. This was an increase of 1.21% compared to the previous year.

Accounting for 94.08% of the total distance travelled, plane travel is the most important means of transportation. This is followed by train travel at 4.95%. The share attributable to travel by car is 0.97%.

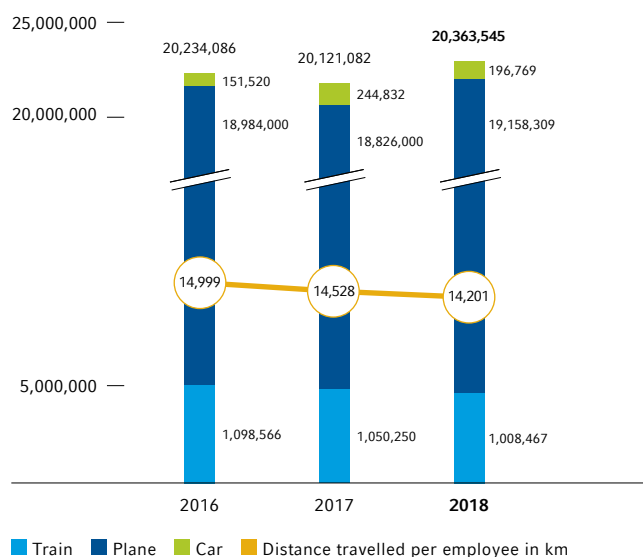
In view of the increased headcount, however, the specific distance travelled per employee fell by 2.25%.

6.1.2 Electricity

From 2012 onwards Hannover Re has obtained its electricity from renewable sources. Since 2014 we have operated a 135 kilowatt-peak photovoltaic system on the roof of the main office building at Karl-Wiechert-Allee 50.

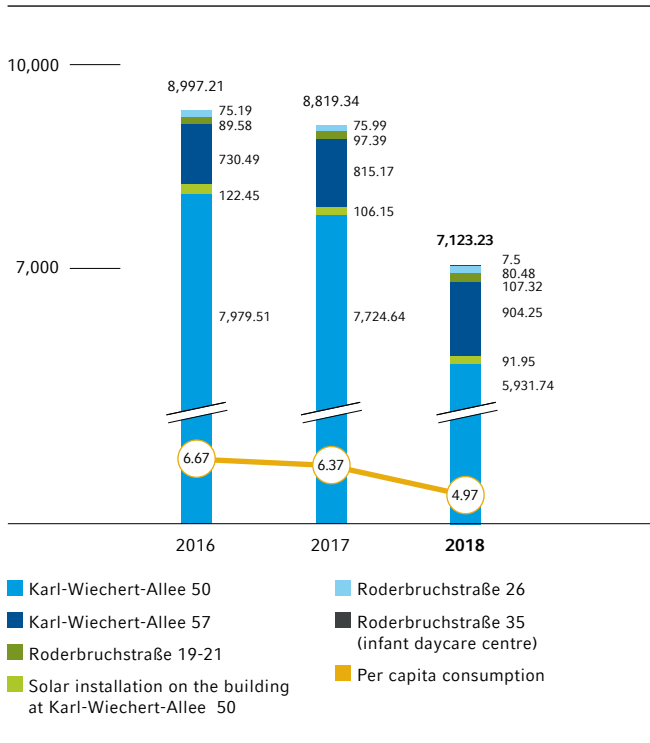
The consumption volumes include the self-generated electricity from our photovoltaic installation at Karl-Wiechert-Allee 50 in an amount of 92 MWh since this is used for our own purposes.

Business travel by mode of transport



The electricity consumption was reduced by 19.3% in 2018 from 8,819.34 MWh to 7,123.23 MWh. The principal factor here was the removal and outsourcing of the data centre. This eliminated servers with a connected load of 1,400 KW as well as the cooling systems with a connected load of 300 KW. The new kitchen technology in the staff canteen at Karl-Wiechert-Allee 50 also plays a role here.

Electricity consumption in MWh



6.1.3 Heating

Our five premises are supplied with district heating on an entirely low-carbon basis from the combined heat and power plants of the local utility company enercity.

In order to factor out the effect of annual temperature fluctuations on the consumption of heating energy, we have adjusted our heat consumption data since 2017 to allow for weather effects.

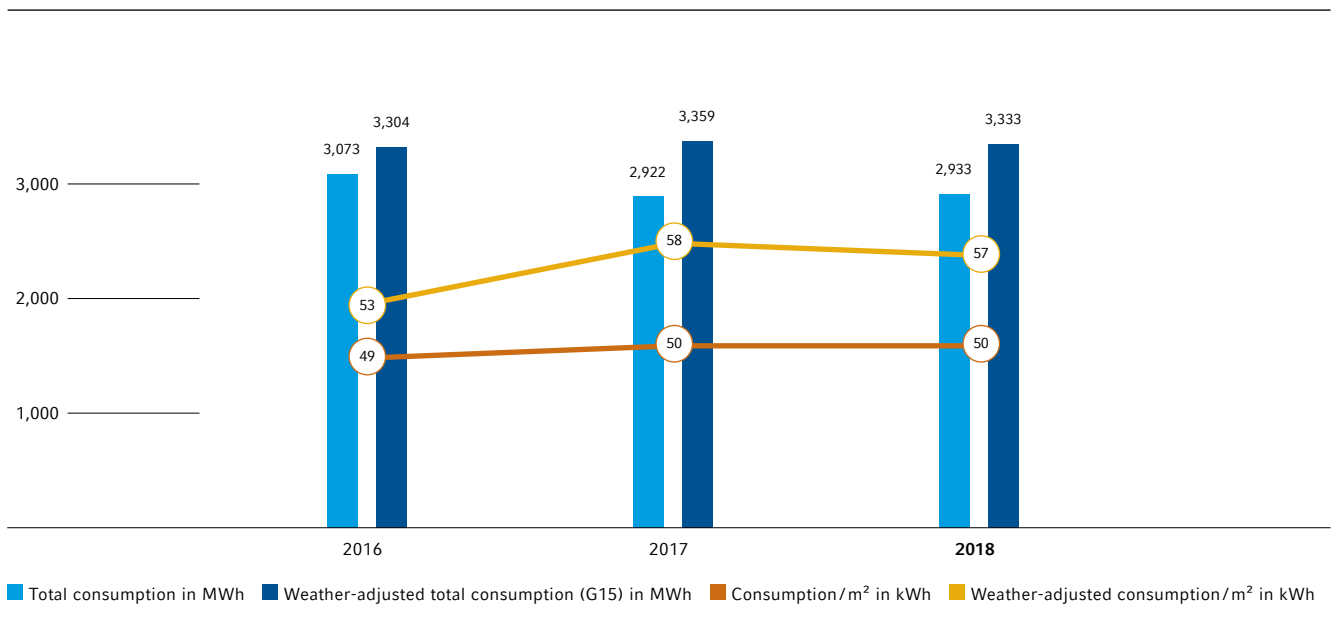
The 2018 calendar year was again significantly warmer than the prior years with a daily mean temperature of 11.1 °C in Hannover.

We use the heating degree day (HDD) model to adjust for weather effects with a heating limit of 15°C for existing buildings.

The consumption adjusted for weather effects was stable in 2018. In the absence of comparative values it is not currently possible to draw any conclusion about the absolute efficiency of the buildings.

The weather-adjusted consumption of the individual premises ranged from 43 KWh (G15)/m² (Roderbruchstraße 19–21) to 74 KWh(G15)/m² (infant daycare centre).

Heat consumption

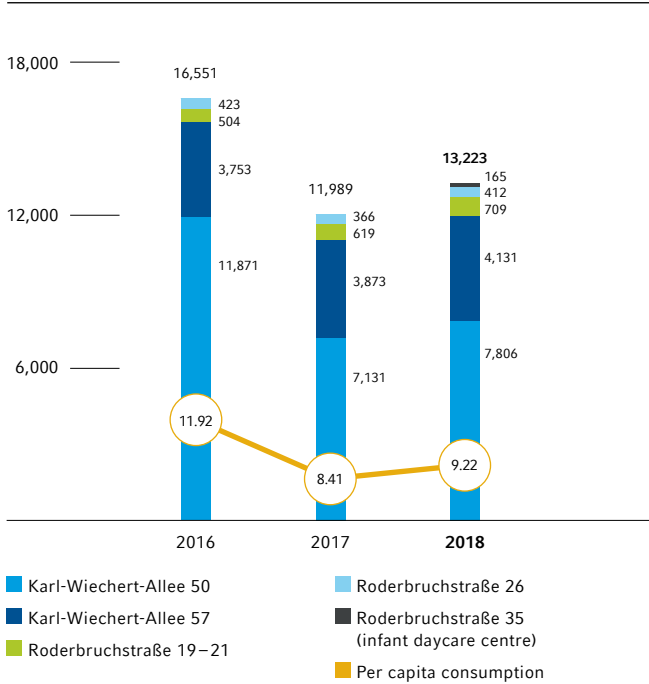


6.1.4 Drinking water

Since 2018 the consumption of drinking water has risen by 10.3% to 13,223 m³. Excluding the infant daycare facility, which is included here for the first time, the increase would have been 8.9%.

The renovation of the fire water lines at the site Karl-Wiechert-Allee 50 and the shutdown of the osmosis plant led to a one-time reduction in consumption in 2017 of 27.56%.

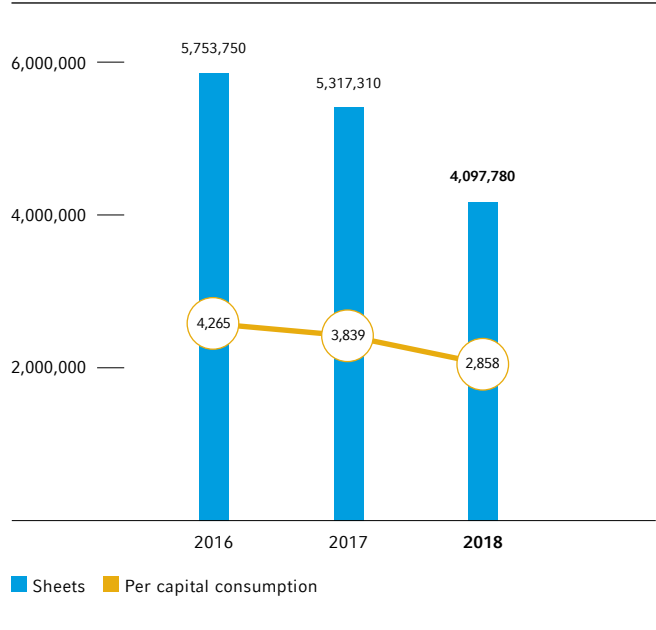
Water consumption in m³



6.1.5 Paper

As far as paper consumption is concerned, the trend of recent years was sustained. In absolute terms, the consumption of paper decreased by 22.94% from 5,317,310 sheets of paper (25 t) to 4,097,780 sheets (19 t). This means that total paper consumption measured by sheets has dropped by 54.84% since 2010 and as much as 65.70% on a per capita basis.

Paper consumption in sheets



The reduction is driven by the trends towards

- increased digitalisation of working practices thanks to the ACORD interface, document management system and release workflows,
- mobile devices (laptops, tablets) that make the printing of documents superfluous, and
- better equipped workstations with larger and multiple monitors.

6.2. Output

As a service provider, Hannover Re does not have any physical output in terms of products. For this reason, the consideration of our output only encompasses waste, recyclables and waste water.

Waste materials by disposal method and waste water

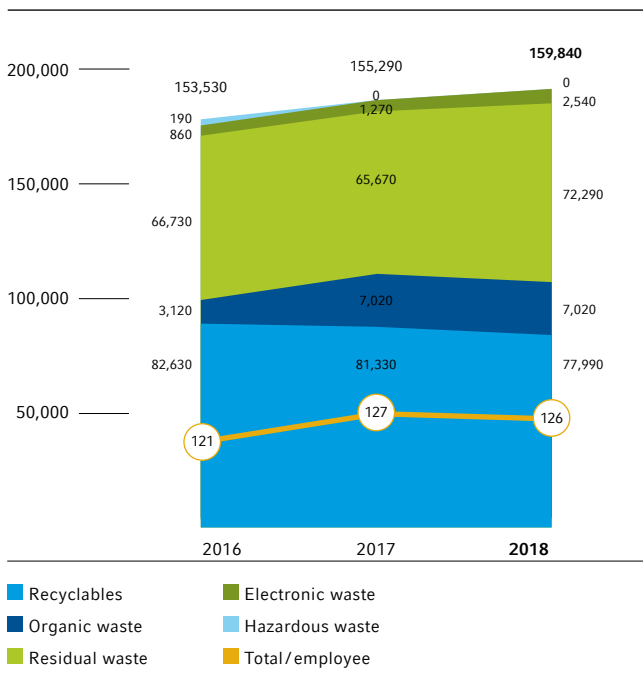
Output	Unit	2018	+/- previous year	2017	2016
Recyclables	kg	77,990	-4.11%	81,330	82,630
	kg/employee	54.39	-7.38%	58.72	61.00
Organic waste	kg	7,020	0.00%	7,020	3,120
	kg/employee	19.58	-3.42%	20.27	9.25
Residual waste	kg	72,290	10.08%	65,670	66,730
	kg/employee	50.41	6.32%	47.42	49.47
Electronic waste	kg	2,540	100.00%	1,270	860
	kg/employee	1.77	93.17%	0.92	0.64
Hazardous waste	kg	0	0.00%	0	190
	kg/employee	0.00	0.00%	0.00	0.14
Total quantity	kg	159,840	2.93%	155,290	153,530
	kg/employee	111.46	-0.56%	112.12	113.81
Waste water	m ³	13,223	10.29%	11,989	16,551
	m ³ /employee	9.22	9.63%	8.41	11.10

It is our assumption that we discharge typical household waste water in the same amount as the purchased drinking water.

The transition to a new catering concept as well as more rigorous separation of organic waste led to a shift in the proportions of the various waste categories.

The increase in residual waste can therefore be attributed to the almost total elimination of convenience food because we prepare preliminary products such as sauces in our own kitchens.

Hannover Re's waste mountain in kg



6.3. Emissions

Hannover Re partners with the Climate Alliance Hannover 2020. We have voluntarily committed to support the goal of reducing greenhouse gas emissions in the municipal region of Hannover by 40% compared to 1990 levels by the year 2020.

With the exception of business travel by plane, we only consider CO₂ emissions associated with the various environmental aspects.

In the case of trips taken by plane, we commission atmosfair to calculate the elevated greenhouse effect caused by aircraft emissions that takes into account the CO₂, H₂O (in vapour form) and NOx at high altitudes. This is referred to as the Radiative Forcing Index (RFI) and has a factor of 2.7.

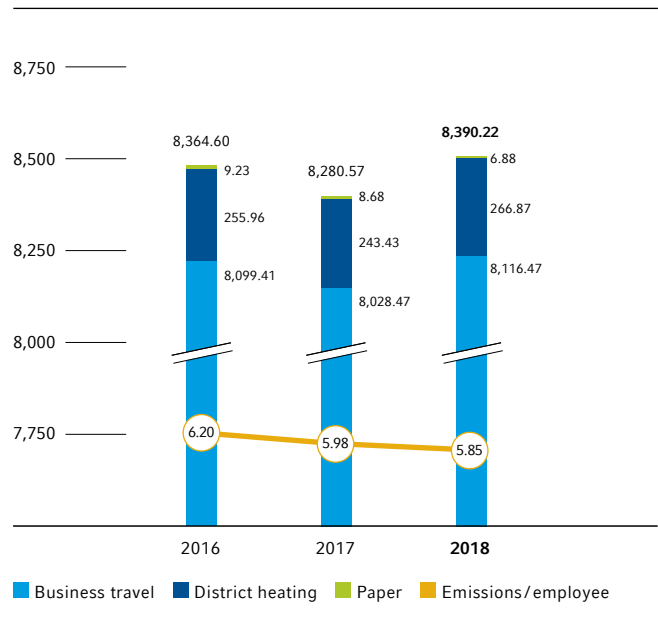
CO ₂ emissions		Unit	2018	+/- previous year	2017	2016
Emissions						
Business travel	t CO₂		8,116.47	1.09%	8,028.87	8,099.41
Train	t CO ₂		4.07	-39.96%	6.79	6.96
Plane	t CO ₂		8,077.60	1.17%	7,984.46	8,057.00
Car	t CO ₂		34.80	-7.50%	37.62	35.45
Electricity (100% green power)	t CO ₂		0	0.00%	0	0
District heating	t CO ₂		266.87	9.63%	243.43	255.96
Paper	t CO ₂		6,879	-20.70%	8,675	9,234
Total emissions	t CO₂		8,390	1.32%	8,281	8,365
Emissions/employee	t CO ₂		5.85	-2.14%	5.98	6.20

Our electricity consumption does not give rise to any emissions because we have purchased our power from renewable energy sources since 2012 and have operated a solar installation on the roof of Karl-Wiechert-Allee 50 since 2014.

Business travel accounts for the bulk of our greenhouse gas emissions at 96.73%. After two years of decreases, total CO₂ emissions increased again for the first time in 2018. The emissions per employee, on the other hand, fell by 2.2%.

The individual environmental aspects are considered in more detail below.

Greenhouse gas emissions in t CO₂

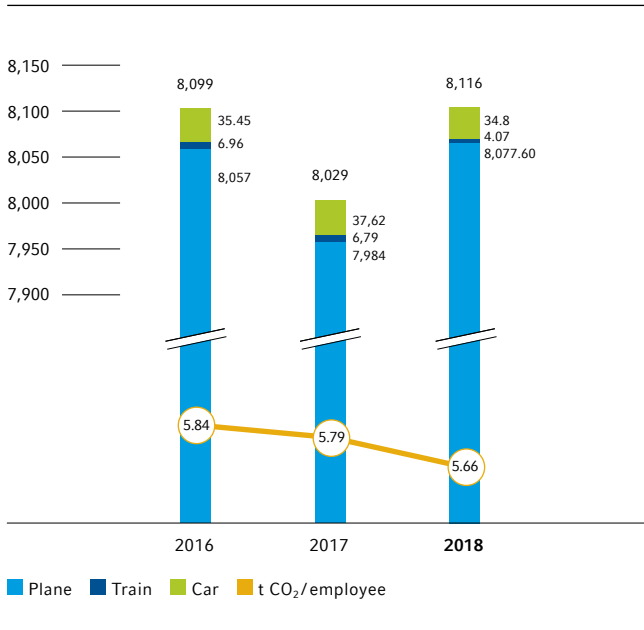


6.3.1 Business travel

As a mode of transportation, travel by plane accounts for the largest share of the total distance travelled and consequently also generates the largest share of greenhouse gas emissions caused by business trips in an amount of 99.52%.

The emissions per employee and per passenger kilometre have remained on virtually the same level since 2015.

Emissions per mode of transport in t CO₂

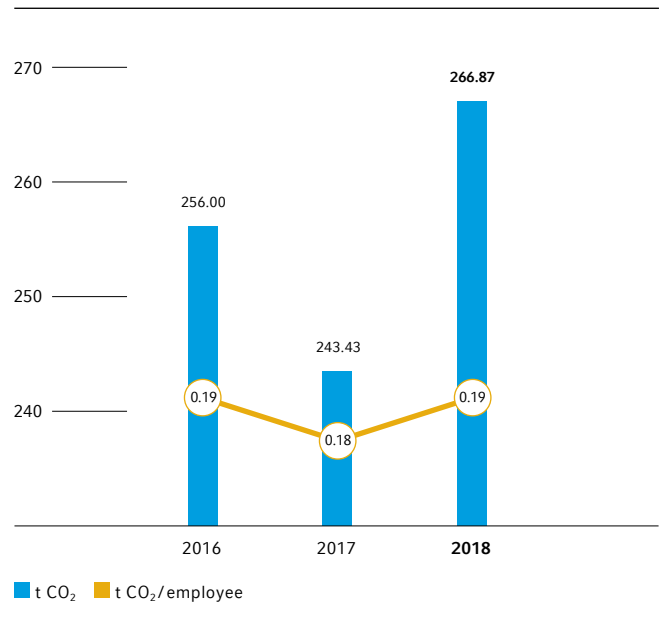


6.3.2 District heating

Emissions caused by the use of district heating rose by 9.63% in the year under review, despite the fact that the consumption of district heating increased by just 0.4%.

The rise in CO₂ emissions results from the higher emissions per MWh indicated by our energy supplier enercity on the basis of the modified calculation method now used by the AGFW (District Heating Working Group), FW 306-06.

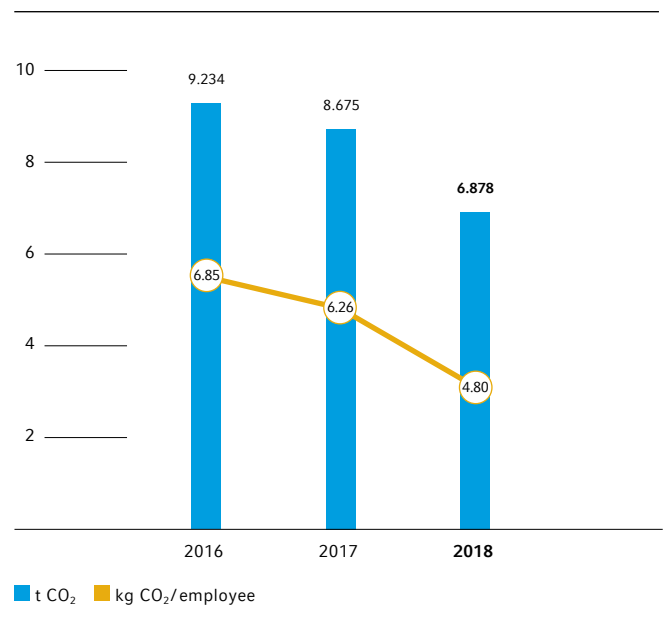
CO₂ emissions caused by district heating



6.3.3 Paper

In view of the fact that the specific CO₂ emissions for paper are rising, it was not possible to reduce the emissions due to paper consumption to the same extent as the paper consumption itself. An appreciable reduction in emissions of 21% was nevertheless achieved.

CO₂ emissions due to paper



7. Offset payments

The three entities at the Hannover location have operated with a net zero carbon footprint since 2016, i.e. unavoidable emissions are offset through projects that avoid emissions elsewhere. For this purpose, our environmental team has agreed on three projects.

We currently offset emissions in an amount of 8,078 t CO₂ resulting from business travel by plane through two projects in equal proportions via atmosfair. The projects supported by atmosfair are conducted according to the Clean Development Mechanism (CDM) defined in the Kyoto Protocol and are additionally guided by the “Gold Standard” set up by international environmental organisations.

- **Biogas Nepal:** In rural Nepal wood is the most important source of energy. Yet wood is also in short supply due to population growth. Our contribution assists with the building of biogas systems that convert manure into gas. This is then used for cooking on gas stoves, for example.
- **Rwanda** is one of the most densely populated countries in the world. Much of the population cooks with charcoal and firewood, making wood a fiercely contested resource. Our contribution helps to equip the region with efficient ovens that consume 80% less wood than traditional cooking stoves.

The emissions caused by our use of district heating, paper consumption and business travel by train and car in an amount of 313 t CO₂ are offset through payments made to the moorland project of Friends of the Earth Germany (BUND – Bund für Umwelt und Naturschutz Deutschland). Partially drained moors are rewatered under this project. Dewatered moorland emits roughly the same quantity of harmful greenhouse gases as road traffic in Germany.



The rewatering of the so-called “Goldgrube” in the Diepholz Moor Depression was the first “climate moor” in the funding project and was implemented with additional support from private and corporate donations. It marks an important step towards the creation of climate moors throughout Lower Saxony.

The purpose of the “Pilotprojekt Moorland® KlimaSpende Niedersachsen” is to help with the rewatering of moorland across Lower Saxony. Dewatered moorland emits a considerable quantity of harmful greenhouse gases. Rewatering a moor, however, inhibits the process through which greenhouse gases are released.

8. Environmental goals

8.1 Environmental goals 2016–2019

We largely achieved the environmental goals that we had set ourselves for the above period. Environmental goals that have still to be achieved were included in the current environmental statement and updated.

8.2 Environmental goals 2019–2022

Direct environmental aspects/Goals	Measures	Year
Business travel		
Reduction of CO ₂ emissions by choosing environmentally friendly means of transportation	CO ₂ -free rail travel within Germany on Deutsche Bahn (IC and ICE trains)	ongoing
	Worldwide availability of “WebEx Cloud” (videoconferences conducted from workstations)	2020
	Increasing proportion of travel mileage saved through videoconferences	2020
	Reduction of kilometres flown/CO ₂ emissions through decentralisation in the APAC region	2023
Carbon-neutral business travel	Voluntary payment of full carbon offsets for all business travel	ongoing
Electricity consumption		
100% usage of electricity from renewable sources	Use of energy from renewable sources at head office	ongoing
	Progressive worldwide changeover to renewables, where available	2022
Reduction of electricity consumption by 10% per employee in the period until 2020	Server virtualisation	ongoing
	Progressive installation of a smart LED lighting control system	ongoing
	Outsourcing of data centre operations to a more efficient data centre in Frankfurt	done
	Refurbishment of the kitchens at Karl-Wiechert-Allee 50. Energy savings are expected from a new catering concept and cooking methods	done
	Refurbishment of the kitchens at Karl-Wiechert-Allee 57. Energy savings are expected from a new catering concept and cooking methods	done
	Reduction of the number of local workstation printers. Energy conservation through the savings associated with not keeping 77 devices in permanent standby mode	done
Paper		
Reduction of paper consumption by 15% per employee in the period until 2020	Expansion of workflows in the electronic document management system and integration into the broker interface	ongoing
Reduction of environmental aspects through more environmentally friendly paper	Fresh review of whether recycled paper can be used in printers and copiers	considered and rejected
Carbon-neutral paper consumption	Voluntary payment of full carbon offsets for all paper consumption	ongoing
Heating energy		
Reduction in the consumption of heating energy (adjusted for weather-related effects) by 5% per employee in the period until 2020	Evaluation of proactive, weather-based management of the heating system in the office premises at Karl-Wiechert-Allee 50	rejected
	Implementation of a new building control system with the goal of achieving greater energy efficiency	2023
Carbon-neutral heating of the office buildings at the Hannover location	Voluntary payment of full carbon offsets	ongoing

Direct environmental aspects/Goals	Measures	Year
Waste		
Share of total waste to be maintained at 125kg per employee in the period until 2020	Optimised separation of kitchen waste into organic waste	ongoing
	Disposal of pens through TerraCycle	ongoing
	Separation and labelling of waste categories in the tea kitchens	ongoing
Water/Waste water		
Consumption of drinking water per employee to be maintained on the level of 9m ³	Installation of state-of-the-art, water-saving flush systems and taps when sanitary facilities and tea kitchens are refurbished	2020
Employee commuting		
Reduction of emissions caused by employee commuting	Installation of charging stations for electric vehicles on company premises to be explored	completed, terms of use still to be agreed with employees
	Support for teleworking	ongoing
	Launch of travel pass (GVH Mobile Card) for public transport to be reviewed	completed
	Review of whether additional bicycle stands can be installed	completed
Asset management		
Management of our investments in accordance with environmental, social and governance criteria	~90% of investments are subject to environmental, social and governance criteria (ESG criteria) and screened half-yearly according to our Investment Policy	ongoing
	Refinement of the existing ESG Investment Policy including addition of a best-in-class investment approach with positive screening	ongoing
	Refinement of our existing negative screening process	ongoing
	Explore possibility of signing the UN Principles for Responsible Investment (PRI)	2020
	We do not invest in securities of issuers that generate 25% or more of their revenues from coal-fired power generation.	since 2018
Supplier management		
100% of relevant suppliers are evaluated according to environmental and social standards	Ongoing evaluation of suppliers according to environmental and social standards in light of materiality considerations.	ongoing
All major suppliers have signed the Code of Conduct for Suppliers	Use of an online tool to educate suppliers	2018
Reinsurance business		
Increasing proportion of new products that reflect sustainability considerations	Step up knowledge sharing with our customers, partners, universities and research institutes with a view to developing products that reflect sustainability considerations	ongoing
	Supporting, developing and expanding products that respond to climate change, e.g. for promoting renewables	ongoing
	Expansion of the dialogue on emerging risks	ongoing
	Where individual risks are concerned, with a few restrictive exceptions we shall as a general principle no longer reinsure any planned new coal-fired power plants or coal mines	from 2019 onwards

9. Validation

9.1 Environmental verifier

The following was commissioned as environmental verifier/environmental verification organisation:
Dr.-Ing. R. Beer (DE-V-0007) in case-based cooperation with Michael Sperling (DE-V-0097)
Intechnica Cert GmbH (registration no. DE-V-0279)
Ostendstr. 181
90482 Nuremberg

9.2 Validation statement

The undersigned, Dr. Reiner Beer and Michael Sperling, EMAS environmental verifiers with the registration numbers DE-V-0007 and DE-V-0097, accredited or licensed for Activity Classification 65 – Insurance, reinsurance and pension funding (NACE Code Rev. 2), confirm that they have verified whether the location/overall organisation Hannover Rück SE, E+S Rückversicherung AG and HDI Global Specialty SE, as specified in the consolidated Environmental Statement, fulfil all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS). By signing this validation statement they affirm that verification and validation took place in full conformity with the requirements of Regulation (EC) No 1221/2009 and Regulation (EU) 2017/1505, that the outcome of the verification and validation confirms that no evidence exists of non-compliance with applicable environmental regulations and that the data and particulars contained in the Environmental Statement/consolidated Environmental Statement of the organisation/location convey a reliable, credible and truthful picture of all activities of the organisation/location within the area specified in the environmental statement.

Nuremberg, 28 August 2019

Dr.-Ing. Reiner Beer
Environmental verifier

Michael Sperling
Environmental verifier

9.3 Dates of the next Environmental Statement

The next consolidated Environmental Statement will be submitted for validation by no later than December 2022. In the intervening years an annual update to the Environmental Statement will be drawn up and submitted to the environmental verifier for validation.

10. Your contact at Hannover Re

Please feel free to contact our environmental management officer if you have any questions or comments regarding our Environmental Statement:

Jörg Weise

Environmental Management Officer
Tel. +49 511 5604-1823
joerg.weise@hannover-re.com

Hannover Rück SE

Karl-Wiechert-Allee 50
30625 Hannover

The current version of this Environmental Statement can be accessed at:

www.hannover-re.com/sustainability

