Reducing our **footprint**

We want to lead by example and work to minimise the environmental impact of our operations. Tackling our CO_2 emissions and reducing energy consumption are key targets across the Group.

As a knowledge company in the financial services sector, we do not cause large environmental impacts through our own operations. Nonetheless, we firmly believe it is important for a responsible company to minimise its environmental footprint, thus leading by example.

For our core re/insurance business, climate change represents a key topic. Reflecting this, we have been focusing on our own CO_2 emissions and energy consumption for many years. Our pioneering initiatives include the Greenhouse Neutral Programme and the CO_{you2} Programme. Both are now into their second cycles, running from 2013 to 2020.

Furthermore, we apply sustainability guidelines to our sourcing and construction activities. Extending our efforts beyond our company, we continue to play an active role in the Swiss Climate Foundation.

Management system and certification

We operate an integrated global management system at our Corporate Real Estate & Services (CRES) division, which interlinks quality and environmental management, and ensures that similar processes are seamlessly managed. Through a systematic, Group-wide reporting process, we monitor our environmental performance and implement appropriate improvement measures.

Environmental objectives and targets are defined centrally at our headquarters, but responsibility for implementing improvement measures also lies with the CRES departments in our regions and individual locations. Some of them define additional environmental targets that reflect specific local conditions and challenges.

Since 2015, our entire CRES division has been certified according to the ISO 14001 environmental management standard (www.iso.org), replacing the location-based approach previously used. This means that all our operations and employees are covered by an ISO 14001-certified environmental management system (EMS).

Complementing the ISO 14001 certification of our Group-wide EMS, we have achieved ISO 50001 certification for the energy management system of our main locations in the EU.

For our recently completed office buildings in New York, Zurich (Swiss Re Next) and Bangalore we have also received the Leadership in Energy and Environmental Design (LEED, new.usgbc.org/leed) certification, the most widely used green building rating system worldwide to evaluate the overall environmental performance of a building. In addition, we are committed to the principles of the 2000-watt society for our Campus Mythenquai in Zurich.

8.1%

Total reduction of CO_2 emissions per employee since 2013

WEBSITE
You can find out about our engagement in the Swiss Climate Foundation at:
www.swissre.com/about-us/corporate-responsibility/footprint/partner-initiative-swiss-climate-foundation.html

WEBSITE
You can find out more about this commitment at:
www.swissre.com/about-us/corporate-responsibility/footprint/2000-watt-society.html

CO_2 EMISSIONS PER EMPLOYEE (FULL-TIME EQUIVALENT, FTE), SWISS RE GROUP

		2013 kg/FTE	2017 kg/FTE	**2018 kg/FTE**	Change in % since 2017	Change in % since 2013
Scope 1	Heating	378	264	**244**	–7.6	–35.4
Scope 2	Power[1]	824	651	**584**	–10.3	–29.1
Scope 3	Business travel	3 713	4 126	**3 892**	–5.7	4.8
	Copy paper	40	17	**16**	–5.9	–60.0
	Waste	50	34	**33**	–2.9	–34.0
	Water	12	12	**11**	–8.3	–8.3
	Technical gases	27	21	**6**	–71.4	–77.8
	Commuting[2]	1 250	1 050	**1 000**	–4.8	–20.0
Total		6 294	6 175	**5 786**	–6.3	–8.1

1 Calculation based on a market-based approach taking into account the purchase of renewable energy instruments, with the exception of the UK, where the government requires companies to report an average grid factor (see table at the bottom for our reporting of emissions from electricity).
2 Commuting data are gathered biannually by means of a survey. The figures are rounded and fraught with considerable uncertainty.

UNDERLYING ENVIRONMENTAL DATA, SWISS RE GROUP

		2013	2017	**2018**	Change in % since 2017	Change in % since 2013
Heating	kWh/FTE	1 931	1 286	**1 190**	–7.5	–38.4
Power	kWh/FTE	4 533	3 606	**3 405**	–5.6	–24.9
Energy intensity	kWh/FTE	6 464	4 892	**4 595**	–6.1	–28.9
Business travel	km/FTE	13 492	15 224	**14 310**	–6.0	6.1
Copy paper	kg/FTE	34	15	**14**	–6.7	–58.8
Recycling paper	%	71	64	**65**	1.6	–8.5
FSC label	%	96	94	**96**	2.1	0
Waste	kg/FTE	181	130	**134**	3.1	–20.4
Water	m^3/FTE	16	16	**14**	–12.5	–12.5

INDIRECT EMISSIONS FROM PURCHASED ELECTRICITY, SWISS RE GROUP

In line with the Scope 2 Guidance of the Greenhouse Gas (GHG) Protocol, we report the emissions associated with our electricity consumption according to both a location-based approach representing the CO_2 intensity of the grids where we operate and a market-based method taking into account emission reductions from instruments such as Renewable Energy Certificates (RECs) and Guarantees of Origin (GOs).

	Location-based total	Market-based total	Instrument types	Percentage kWh
	t CO_2e	t CO_2e		
Switzerland[1]	980	358	GOs	35%
US[2]	8 437	244	RECs	24%
UK[3]	6 134	6 134	GOs, residual mix	19%
Rest of the world[4]	7 832	2 162	RECs, GOs, residual mix	22%
Total	**23 383**	**8 898**		**100%**

1 All Swiss electricity producers are required by law to declare the quality and quantity of the electricity produced. Swiss Re buys 100% green labelled electricity (naturemade star).
2 In the US, we purchase green-e labelled Renewable Energy Certificates (RECs) for our total power consumption.
3 The UK government claims all green credentials of renewable electricity produced in the country. Even though over 80% of the electricity we consume in the UK comes with Renewable Energy Guarantees of Origin (REGOs), we report the same emission figures for location- and market-based approaches.
4 Our next biggest power consumption is in Slovakia and India, each with 3% of the Group's total.

Our Greenhouse Neutral Programme

Climate change has been a strategic priority for Swiss Re for some 30 years. It is a key topic for a re/insurer, because it leads to more extreme and more frequent weather events. Our strategy to tackle climate change rests on four pillars, one of which is our pledge to reduce our own CO_2 emissions (see page 16).

Our Greenhouse Neutral Programme is the principal means to achieve this goal. It combines two commitments: firstly, to reduce our CO_2 emissions per employee (full-time equivalent, FTE); secondly, to offset all the remaining emissions by purchasing high-quality emission reduction credits, thus making our company fully greenhouse neutral.

We originally launched the Greenhouse Neutral Programme in 2003 for a ten-year period. During that time, we gradually reduced our CO_2 emissions by 49.3% per employee (FTE) and compensated all the remaining emissions.

WEBSITE
You can read more about the first phase of our Greenhouse Neutral Programme at: **www.swissre.com/about-us/corporate-responsibility/footprint/greenhouse-neutral-programme-first-phase.html**

Goals and scope

Seamlessly continuing from the programme's first phase, we launched a second commitment cycle running from 2013 until 2020. However, after almost halving our CO_2 emissions per employee in the previous ten years, the potential for further reductions is now significantly smaller. Thus, our target until 2020 is to keep our CO_2 emissions per employee stable at the 2013 level. In view of our expansive business strategy, especially in high growth markets, we regard this as an ambitious goal.

RE100 AND EP100

At the end of 2018, approximately 94% of the power we purchased across the Group came from renewable energy sources. We are committed to raising this figure to 100%, which is why we helped establish the Climate Group's RE100 initiative in 2014 as a founding member.

The goal of this initiative is to unite the world's most influential companies in a shared commitment to use 100% renewable power by 2020. To achieve this, the RE100 group approaches policymakers and regulators at national and sub-national level to make renewable energy more available. RE100 grew substantially again in 2018 and now includes more than 160 of the world's largest companies. www.theRE100.org

Going beyond these collective efforts, we have recently started to build solar power plants at our own offices.

In 2016, we also signed up to the EP100 initiative, launched by the Climate Group (www.theclimategroup.org) and the Global Alliance for Energy Productivity (www.globalproductivity.org). This is a shared commitment by leading global companies to double their energy productivity or, in other words, to get more economic output from each unit of energy. www.theclimategroup.org/project/ep100/

Goals of our Greenhouse Neutral Programme until 2020:

- Maintain the emissions reductions we achieved between 2003 and 2013 regarding power consumption, heating and business travel;
- Fully offset the remaining emissions;
- Continuously reduce energy intensity (power consumption and heating) by 2% per year (kWh/FTE);
- Obtain 100% of power from renewable sources by 2020.

In the current cycle, the programme covers the following emission sources:

- Heating (Scope 1)
- Power consumption (Scope 2)
- Business travel, copy paper use, waste generation, water use, technical gases and employee commuting (Scope 3)

In 2018, our total CO_2 emissions per employee (FTE) decreased by 6.3% and were thus 8.1% lower than in 2013. We achieved this reduction mainly through a decrease in business travel and by further cutting power consumption at our business locations. Moving into more energy-efficient buildings, eg in New York and Zurich (Swiss Re Next), has been a key factor in this.

28.9%

Total reduction of energy intensity per employee since 2013

Using renewable power

Purchasing power from renewable rather than conventional sources has been a principal measure of our Greenhouse Neutral Programme. Concluding a gradual build-up that started in 2005, we are now using 100% renewable power at all the Group's locations where it is available in reliable and trustworthy quality (ie at a total of 30 locations in Asia, Europe, North America and Oceania). This means that approximately 94% of our total power consumption came from renewable sources at the end of 2018.

To assess the quality of the renewable power available in individual locations and select suitable sources, we use a "minimum standard" that clearly states how we define renewable power and what requirements it needs to meet.

In particular, we pursue the following impactful green power options, with decreasing preference:

- Direct investments in our own solar plants (eg at Armonk, Swiss Re Next);
- Indirect investments via long-term virtual power purchase agreements from newly built plants (see page 49);
- Sourcing of high-quality renewable energy certificates (eg naturemade star in Switzerland and NaturEnergie in Germany).

Reducing energy consumption

In parallel with our switch to using renewable power, we have made continuous efforts to lower the actual amount of energy consumed per employee (FTE) or, in other words, to reduce our energy intensity. Through many small measures to improve energy efficiency and by concentrating back-office tasks in fewer and more energy-efficient buildings, we managed to cut our energy intensity by a total of 46.5% between 2003 and 2013.

For the current phase of our Greenhouse Neutral Programme from 2013 until 2020, our goal is to continuously reduce our energy intensity by 2% per year. At the end of 2018, the total reduction we had reached since 2013 was 28.9%. We partly achieved this by decommissioning existing office buildings and moving into more energy-efficient ones.

As part of our Greenhouse Neutral Programme, we are committed to covering 100% of our power consumption from renewable sources by 2020. Through a "virtual power purchase agreement" completed in 2018, we help fund the construction of a new wind farm in the US and get access to renewable energy supplies at steady prices.

Entering into a **virtual power purchase agreement (VPPA)**

Switching to renewable energy is a key measure we have taken to reach our emissions reduction goals. This is one of the reasons why we have helped launch the RE100 initiative as a founding member.

To date, Swiss Re has obtained its renewable energy mainly by purchasing Energy Attribute Certificates (EACs). These EACs are "unbundled", meaning they are not linked to the actual creation of new renewable power generation capacity. As a result, unbundled EACs are no longer seen as having a sufficient environmental impact.

This is why we entered into a virtual power purchase agreement (VPPA) for the first time in 2018, partnering with Apple, Akami and Etsy. In this way, we want to secure high-quality EACs for the total power consumption of all our offices in North America.

A VPPA is a financial contract rather than a contract for physical power. Under it, Swiss Re will pay a developer a fixed price for a fixed amount of power produced by a renewable energy asset for a defined period of time. However, this power will never actually be delivered physically to our offices and we will not pay the strike price directly to the developer. Instead, the developer sells the energy from the project to the market at prevailing prices. When the variable market price is lower than the fixed VPPA price, we pay the difference to the developer – and the other way round when the market price is higher than the fixed VPPA price.

Such VPPAs combine an environmental benefit with a financial one. Firstly, a long-term contract with a fixed price for the electricity produced allows the developer to secure financing for the construction of new renewable energy capacity. Our partnership with Apple, Akami and Etsy has helped secure financing for the Green River wind farm in Illinois, as well as giving us access to renewable energy produced at competitive prices.

Secondly, a VPPA allows for the hedging of variable energy market prices. When market prices increase, our offices will incur higher expenses but will receive funds (the difference between market price and fixed price) from the VPPA – and vice versa. As the fixed amount of power covered by the VPPA is equivalent to our expected total energy consumption in North America, shifts in energy prices should roughly balance out within this area.

The innovative character of the VPPA approach has been recognised by both peers and the media.

We have also continued our efforts to create more flexible and modern office environments that offer our employees optimal working conditions while, at the same time, using space and resources more effectively. The spread of digital communication and devices makes it possible to work seamlessly across different locations and devices, creating the foundation for a more flexible and informal workplace set-up that encourages teamwork. At Swiss Re Next, for example, this open workplace concept is a key feature. Although further reducing our environmental footprint is not the primary driver of these efforts, their potential to lower the energy intensity of our locations is nevertheless substantial.

Minimising business travel

As a result of the substantial cuts we have achieved in CO_2 emissions from power consumption and heating since 2003, business travel easily constitutes Swiss Re's largest emissions source today. Since the business trips our employees take are ultimately driven by client needs, they are difficult to influence. However, we have taken several measures to reduce the need for business travel and to curb unnecessary business trips.

For a start, we have built up a dense network of video conferencing equipment across the Group. Recently, we replaced these facilities with state-of-the-art technology, which creates a real-time, life-size virtual meeting experience in specially designed rooms. By the end of 2018, we had a total of 159 video conference facilities worldwide. In total, we hosted 97 617 video calls in 2018, amounting to 70 249 hours.

75 794

Tonnes of CO_{2e} compensated in 2018

We continuously monitor all travel budgets and collect travel data centrally. Furthermore, we introduced an internal carbon levy on air travel in 2014, which uses the "polluter pays" principle. It allocates the costs of the Voluntary Emissions Reductions (VERs) we need to buy to offset our CO_2 emissions to the Group's Global Functions in proportion to their respective share of air travel; previously they had been borne centrally by Group Finance. This internal price on carbon heightens awareness of travel costs among our managers and employees and creates a further incentive to reduce air travel, in addition to flight costs.

Despite these measures, the amount of kilometres travelled per employee and the associated emissions increased for a number of years, mainly driven by our continued expansion in high growth markets. After stabilising in 2017, the average total distance travelled by each of our employees decreased by 6.0% in 2018.

Paper, water and waste

We also calculate and compensate the CO_2 emissions from further sources along our supply chain (Scope 3), ie copy paper, waste generation and water use. The overview of all our emissions sources on page 47 shows, however, that these are less relevant in our business than other environmental impacts, which is why we have not set quantitative reduction goals for them.

Furthermore, it is difficult for us to influence water use and waste generation at locations where we rent office space. In the office buildings we own ourselves, though, we ensure that appliances meet high standards of water efficiency.

As paper use is more responsive to managerial action, we have taken a number of measures to reduce the average amount used by our employees in recent years. New IT solutions such as "pull printing" (which eliminates uncollected printouts), web-based collaboration and document management platforms have led to a significant decrease of paper use in all our locations. Average paper use per employee fell by 6.7% in 2018, mainly as a result of ongoing digitisation and measures such as pull printing, leading to a total reduction of almost 60% since 2013.

Offsetting our remaining CO_2 emissions

The second commitment of our Greenhouse Neutral Programme is to compensate all CO_2 emissions we cannot avoid. For the seven emissions sources covered by it, we bought and retired VERs for a total of 75 794 tonnes of CO_{2e} in 2018.

We are keen to ensure that the VERs we buy are of a high environmental standard and have developed a set of criteria to select the projects generating certificates. In particular, we give priority to those which create strong social side effects and benefit the poorest regions. You can read more about a compensation project we selected in 2018 on page 51.

External verification of our CO_2 reporting

Ever since we first launched our Greenhouse Neutral Programme in 2003, we have disclosed our CO_2 emissions, their principal sources and relative performance over time. The method we use to calculate our emissions is based on the guidelines of the Greenhouse Gas Protocol, the most widely used emissions accounting standard (www.ghgprotocol.org/).

Before our emission figures are published, PricewaterhouseCoopers checks them to verify our calculations. Their complete assurance report for the whole Corporate Responsibility Report is included on pages 72–73.

A farmer delivers cotton stalks to a biomass power plant in northwest China instead of burning them in the open field, thus helping to generate energy and avoiding CO_2 emissions. We support this project through the Voluntary Emissions Reductions we bought in 2018.

Turning cotton waste into clean electricity in northwest China

As part of our Greenhouse Neutral Programme, we compensate all the CO_2 emissions we have not been able to avoid. The projects we select for this purpose need to be of the highest quality and to benefit communities highly vulnerable to the consequences of climate change. Based on these criteria, in 2018 we supported the Gold Standard-certified Bachu Biomass Project in China's northwestern Xinjiang, the largest cotton-growing region in China.

Climate change-induced natural perils such as drought, hail, wind and low-temperature waves pose a threat to the thriving cotton production hubs of the Xinjiang region, including Bachu County. For that reason, Swiss Re delivered the first low-temperature weather index insurance programme for cotton production in Xinjiang in 2015. The scheme addressed the problem of reduced crop yields from cold weather not addressed by traditional insurance products and provided coverage for about 840 hectares of cotton.

Next to extreme weather conditions, Bachu County faces further problems because power generation is predominantly coal-fired, leading to the release of greenhouse gases and other pollutants. Cotton farmers have further contributed to air pollution by burning cotton stalks, which they used to consider as waste, in the open field.

Thanks to the Bachu project, these cotton residues are now used as renewable fuel to fire a new biomass power plant. In this way, the project reaches several objectives at once: it reduces greenhouse gas emissions, improves air quality and makes the local power supply more stable.

Since its implementation in 2008, the project has mitigated 62 774 tonnes of CO_{2e} and generated an average of 79 200 MWh of renewable electricity annually – enough to power around 53 000 Chinese homes.

The project has also created a number of social benefits that increase the resilience of the local community.

As cotton stalks have turned from being seen as waste to a valuable by-product, selling the residue has allowed farmers to boost their combined income by up to USD 5 million per year. Furthermore, the combustion process at the plant creates ash that the farmers can use as fertiliser.

All in all, the Bachu project has created more than 100 jobs in the local communities. More than half of these positions are held by Turkic Muslim Uyghurs and other regional ethnic minorities, while a quarter of total project staff are women.

30%

Share of our tier 1 and 2 vendors included in the EcoVadis platform by end of 2018

(13% by the end of 2017)

Sustainability in our supply chain

As a re/insurance company, Swiss Re does not have an extensive supply chain. Our core business does not require us to buy intermediate inputs like a manufacturing company. However, to run our operations, we need a range of goods and services.

When we make these purchases, we apply general and individual criteria. In line with our overarching Group Sourcing Policy, we select suppliers that offer the best value for money, meet high quality standards and adhere to Swiss Re's Code of Conduct. As a signatory to the UN Global Compact, we are committed to honouring all its ten principles. Amongst other things, these prohibit any sort of discrimination or the use of child or forced labour, and require that the freedom of association and the right to collective bargaining be upheld.

We consider environmental criteria relating to materials and ingredients, production methods, recycling and waste. For some sourcing categories, we have developed "minimum standards" that further specify our requirements. Besides power (see page 48) and paper (see page 50), these cover cleaning services and agents, refrigerant agents and building materials.

When selecting new products and suppliers, we examine whether they comply with these requirements as part of the overall evaluation process. We take a fresh look at existing strategic suppliers in our periodic contract reviews, and we visit individual suppliers to inspect them onsite. Internally, we hold regular awareness trainings with our sourcing staff.

In 2016, we signed up for EcoVadis (www.ecovadis.com), a collaborative platform for sustainable supply chain management, which covers a wide range of screening criteria across the topics of environmental impacts, human rights, labour practices, ethics and sustainable procurement. This will allow us to assess the sustainability performance of our suppliers more systematically with the help of key performance indicators and to engage them in improvements. It also helps us reduce and manage potential sustainability risks in our supply chain.

We have been implementing the EcoVadis platform into our sourcing processes across all categories. For our tier 1 and tier 2 vendors, we have set ourselves the goal of including all of them in the platform by 2020. At the end of 2018, implementation was completed for 30% of these vendors.

2 924

CO_{you2} subsidies granted to our employees in 2018

(2 528 in 2017)

The CO_{you2} Programme

Tackling our carbon footprint is one of four pillars of our climate change strategy (see page 16). In 2007, we launched the CO_{you2} Programme because we wanted to make our commitment more tangible for our employees and help them become more aware of climate change. The programme offers subsidies for a range of investments through which our employees can reduce their private carbon footprints. To our knowledge, it was the first global corporate initiative of its kind at the time.

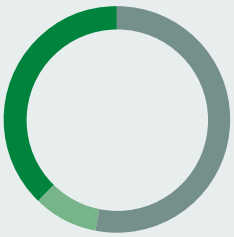
The investment options we offer for subsidies are clearly specified in the programme. Some of them are supported at all our locations, while others vary to account for regional differences in climate, living conditions etc. Our subsidies cover 50% of the investment amount up to a locally determined maximum allowance. All regular employees are entitled to apply and new employees can submit subsidy requests after three months following their hire start date.

In 2018, we granted a total of 2 924 subsidies spread across three product categories: home appliances, home infrastructure and mobility. Over the past five years, electricity-powered mobility has become more prominent, with 811 subsidies for e-bikes, e-motorbikes, e-cars and plug-in hybrid electric cars.

Amongst the larger Swiss Re locations, uptakes per employee were highest in Slovakia and India. Our office in Slovakia has witnessed particularly strong growth in recent years. Many new employees there have made use of the opportunity to claim subsidies, eg for highly energy-efficient fridges and washing machines as well as bicycles for their daily commute to work. In Europe, in general, mobility remains a popular category, with bicycles the most common type of subsidy.

In our Asian locations, energy-efficient home appliances were particularly popular. In the Americas region, both home appliances and home infrastructure subsidies were sought-after subsidy categories.

CO_{YOU2} PAYOUTS IN 2018, BY CATEGORY



NUMBER OF CO_{YOU2} PAYOUTS IN 2018, PER 1000 EMPLOYEES