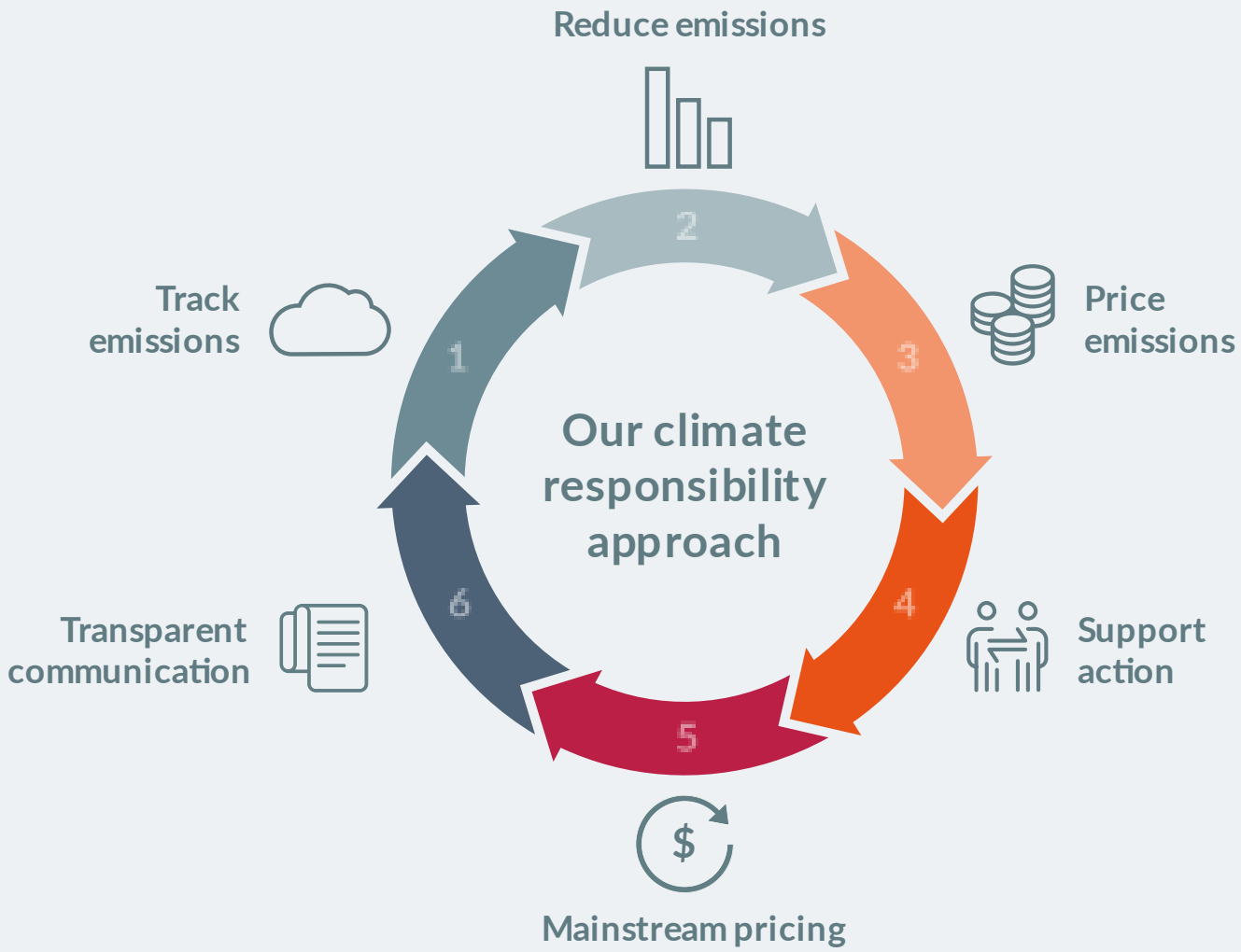
Climate Responsibility 2021

Communication of measures to address our climate footprint



NEW CLIMATE INSTITUTE

2021

Climate Responsibility 2021

Communication of measures to address our climate footprint

See more information about the **climate responsibility** approach and download the report.
http://newclimate.org/climateresponsibility/

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Our **climate responsibility** approach

A new approach for organisations to take responsibility for their climate impact

To address the climate crisis, rapid decarbonisation is urgently needed across all sectors. Existing climate pledges and policies fall far short of what is needed to transition to sustainable, low-carbon economies (Climate Action Tracker, 2020). Organisations increasingly recognise that their activities are drivers of this problem and feel **compelled to step up and take responsibility for their impact on the climate.** Common approaches to address this responsibility – such as shadow carbon pricing or the concept of offsetting – are challenging to implement in a way that ensures transparency and effective climate impact in-line with the Paris Agreement objectives.

Our **climate responsibility** approach addresses our own climate footprint in a transparent and constructive way. We set out to do the following:

1 Track emissions

We maintain an overview of our GHG emissions on an annual basis and continuously strive to improve our understanding of the impact that we have, in order to plan and implement actions to reduce our own GHG emissions as far as possible.

2 Reduce emissions

We aim to reduce our own emissions as much as possible, with a vision of zero emissions as soon as possible.

3 Price emissions

We impose a price per unit of emissions, based on a price signal aligned with the objectives of the Paris Agreement, for our GHG emissions we cannot yet avoid. Based on this price level, we generate funds which represent the actual costs of this approach.

4 Support action

With the funds from step 3, **we support initiatives for transformational action to address climate change** that advance progress towards achieving the Paris Agreement objectives for mitigation and adaptation. This includes initiatives that may not yet generate quantifiable emission reductions or credits, but which could have a transformational impact in the future.

5 Mainstream pricing

We aim to mainstream the pricing of our climate impact through our accounting processes, to raise awareness and integrate these costs into decision making processes both internally, as well as with funders and partners, who we encourage to recognise these costs in the same way.

6 Transparent communication

We transparently communicate the details of this approach on a regular basis, including challenges and lessons learnt, in order to identify and collaboratively address issues, prompt discussion and encourage replication amongst other organisations. We solicit feedback to continuously improve and ensure the relevance of our approach.

We do not intend to offset our emissions and do not strive for carbon neutrality, based on offsets. We aim to create a transparent mechanism that reduces our direct climate impact and channels resources to initiatives that currently deliver real impact in addressing climate change or have great potential to do so in the future. In this document **we hope to outline a transparent mechanism that can be followed by others.**

NewClimate Institute's GHG emissions footprint

Figure 1 gives an overview of NewClimate Institute's emissions from travel, office energy use and procurement from 2014 to 2020. During this period, emissions from these sources amounted to an estimated 786 tCO_2e. Due to exceptional circumstances during the COVID-19 pandemic, emissions in 2020 were more than 80% lower than in 2019, at 47 tCO_2e.

In the years before the COVID-19 pandemic, the vast majority of NewClimate Institute's GHG emissions came from air travel. At nearly 240 tCO_2e, emissions from air travel accounted for approximately 90% of our calculated emissions in 2019. Our travel activity is a function of the projects that we work on and the countries that we work with. We choose the countries we work with based on an assessment of the potential climate change mitigation impact we can have in the project. Travel restrictions related to the COVID-19 pandemic stopped all business travel in March 2020, which resulted in a comparatively low level of travel emissions in 2020. This has brought challenges for activities that have previously relied on physical attendance at meetings, conferences, and in partner countries; it is highly likely that travel will increase again in 2021 and 2022 as the restrictions ease. However, the restrictions have also led to new working arrangements with some international partners, which may reduce the need for travel in the future, compared to the years before the pandemic (see section 2).

Energy for heating and cooling accounts for most of our office energy emissions, at around 9 tCO_2e in 2018 and 2019. Due to a regular one-year delay in the receipt of data on energy use for heating and cooling, it is not yet possible to determine how reduced office presence during the pandemic may have affected energy consumption for heating and cooling in 2020; our preliminary estimate for heating and cooling emissions is based on historical data. At 7 tCO_2e, emissions associated with electricity consumption were lower than in 2019, due in most part to reduced presence of staff in offices during the pandemic.

The emissions associated with the procurement of equipment and office furnishings represent more than 10% of our emissions over the 2014-2020 period, and nearly half of emissions in 2020. This is mostly from the procurement of IT equipment and office furnishings, for our new office spaces in Berlin and Cologne.

Figure 1 shows a clear trend of increasing emissions since 2014, corresponding to the growth of our organisation. This period of growth entails an increase in the number of project activities that we work on, to further pursue the objectives of the organisation.

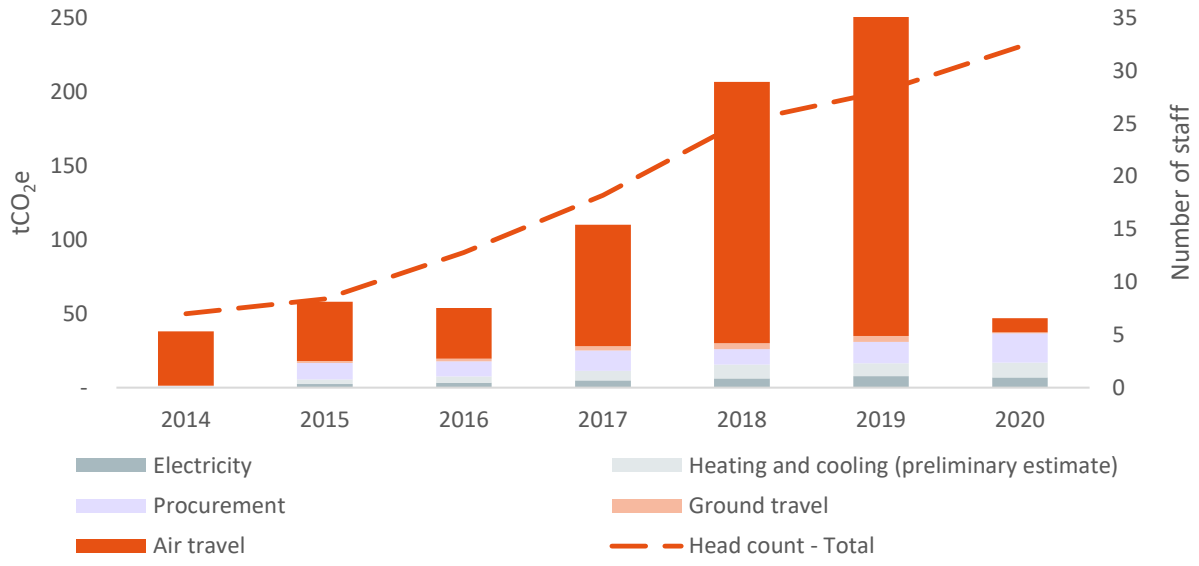

Figure 1: GHG emissions from travel, office energy use and procurement (2014-2020)

1 Maintaining an overview of GHG emissions

Climate responsibility step 1: We maintain an overview of our GHG emissions on an annual basis and continuously strive to improve our understanding of the impact that we have.

NewClimate Institute performs a transparent ongoing analysis of the organisation's GHG emissions, reporting on an annual basis. The scope of the organisation's own emissions accounting is internally reviewed and publicly communicated every year, with the intention to continuously improve our understanding of our climate impact as well as continuously take measures to reduce our impact.

Table 1 gives an overview of emission sources included in our assessment, for the period between 2014 and 2018, for 2019 and for 2020. The subsections below provide details on the calculation methodologies for each emissions source. Annex I presents an overview of activity and emissions data.

Table 1: Scope of emissions accounting for the 2014-2020 period

Emissions source		**Means of GHG emission calculation and scope clarifications**		
		2014-2018	2019	2020 onwards
Staff travel	Flights	Tracked and measured		
	Rail	FTE factor		Tracked and measured
	Intercity bus	Not included		Tracked and measured
	Taxi	FTE factor		Tracked and measured
	Staff commuting	Our emissions accounting does not include private travel that is not controlled by NewClimate, such as commuting. We still put measures in place to address these emission sources (see section 2).		
Non-staff travel		Partly tracked and measured. NewClimate takes responsibility for non-staff travel when this is arranged and paid for by the organisation, for example through invitations to job interviews. Our emissions accounting does not include non-staff travel which is not arranged but partly initiated by NewClimate, for example through invitations to events, though we still identify measures to address this (see section 2).		
Office energy	Electricity	FTE factor	Tracked and measured	
	Spatial heating	FTE factor	Tracked and measured, with one year delay.	
	Spatial cooling	No cooling in offices.	Tracked and measured, with one year delay.	
Procurement		Tracked and measured.		
Waste		Not quantitatively assessed due to poor data availability		

***** Means of GHG emission calculation (see description below table, and Annex I for quantitative detail):

Tracked and measured - activity is tracked to inform an estimate.

FTE factor - assumptions are made to derive an estimated emissions factor per FTE, without tracking all activity.

Full details of estimation methodologies are given for each emission source in the following subsection.

The sub-sections below describe the approach taken for estimating and calculating activity and emission factors. Full quantitative details on activity, emission factors and emissions for each emission source over the period 2014-2020 are included in Annex I.

Air travel emissions

Activity tracking — Our emissions from air travel are tracked through the travel expense report forms of all staff and non-staff travel when this is paid for by the organisation, where the required flight details are entered directly by staff and reviewed by accounting. Shorter-term cancellations of flight booking by staff are treated as if the flight had been taken. This is based on the assumption that plane seats remain empty in such cases.

Emission factors — Emissions are calculated using the methodology from Atmosfair[1]. This methodology for the estimation of GHG emissions includes the estimated equivalent climate impact of non-carbon climate forcers from aviation, such as condensation trails, ice clouds and ozone generated by nitrogen oxides and results in emission estimates approximately three times greater than if calculating only direct CO_2 emissions (Atmosfair, 2016).

Ground travel emissions

Activity tracking — From 2020, we use staff travel expense report forms to more accurately track use and GHG emissions of different ground-based modes of transportation including use of trains, long-distance buses, taxi and car (sharing) of all staff and non-staff travel when this is arranged and paid for by the organisation.

For the 2014-2019 period, travel activity from rail and taxi was estimated by collecting data from a sample of 11 employees in 2019 and extrapolating that factor across the remainder of staff for the period.

Emission factors — Although some of our rail travel crosses international borders, we currently base our emission calculation on the emissions intensity of rail travel within Germany, which accounts for the vast majority of our rail travel. Despite Deutsche Bahn's claim to operate on 100% renewable electricity, we take the German grid emission factor as a basis for calculating our emissions from rail travel. We applied 2018 transport emission factors from the German Federal Environment Agency for the calculation of our travel emissions in 2020 (Umweltbundesamt, 2020). 32 gCO_2/pkm was applied for rail travel, 29 gCO_2/pkm for long-distance buses, and 220.5 gCO_2/vkm for taxi and car (sharing) use.

Emission from office energy use

Activity tracking — Since 2019, we calculate our emissions from office energy use based on measured and tracked energy consumption data for electricity, heating and cooling. Energy consumption data for heating and cooling in 2020 is not yet available; until data is available, we based a preliminary estimate for 2020 on the average energy consumption per full-time equivalent staff in 2019. We will update our 2020 activity data once this information is made available to us.

Our energy consumption tracking includes energy within our office spaces as well as energy for shared building services. Within our office spaces we have

[1] Available via https://www.atmosfair.de/en/offset/flight/

direct control over our energy consumption, and we can be confident that the values tracked and measured accurately reflect our energy use. Outside of our offices, we are also partially responsible for the energy consumption in the buildings in which our offices are located; we do not have full control over this energy consumption, and our responsible share can only be indicatively estimated based on our share of the building costs.

Due to the growth rate of the organisation in its initial years, NewClimate had various different office locations. Several of which were in buildings where NewClimate Institute was a subletter, or had contracts that did not directly receive bills for energy use or data that could be used to determine energy consumption with a reasonable degree of accuracy. For the 2014-2017 period, estimates are based on the average energy consumption per full time equivalent employee in 2018, 2019 and 2020, which has been extrapolated to estimate the total energy consumption for the whole period.

Emission factors

In 2020, we applied emissions factors of 401 gCO_2e/kWh to electricity consumption in both offices, 251 gCO_2e/kWh to district heating in Cologne and 219 gCO_2e/kWh to gas-fired heating and cooling in Berlin.

Heating and cooling in NewClimate's Berlin office building is produced by gas-fired combined cooling, heat and power (CCHP) units within the office buildings. The cogeneration of electricity with cooling and heating may increase the efficiency of energy generation. However, electricity generated is fed into the national grid under net-metering regulations and may therefore be considered to lead to marginal improvements in the emissions intensity of the electricity grid, rather than the energy delivered to the building's users. Accordingly, we conservatively apply the grid emission factor for electricity, alongside a standard emission factor for gas heating and cooling. NewClimate's Cologne office from 2014 to 2020 did not have air conditioning. Heating was provided through a district heating connection.

The emissions factor of district heating in the region around Cologne is available from the official LAK Energy Balances for Nordrhein-Westfalen the years 2014 to 2018 (LAK, 2020). For 2019 and 2020, we adopt the most recent value of 251 gCO_2e/kWh from 2018. Since we do not currently know the specific details on the efficiency of the boilers in our Berlin office, we estimate and apply an emissions factor of 219 gCO_2e/kWh for gas heating and cooling in the 2014-2020 period, based on the general emission factor of natural gas combustion (International Energy Agency, 2018) and a conservative assumption of 92% combustion efficiency, which represents the lower end of the typical range of modern gas boiler efficiencies (92-95%; IEA, 2019).

NewClimate has carefully selected – ElektrizitätsWerk Schönau (EWS) – as its electricity supplier. EWS invests in its own renewable energy projects. We consider this to have a positive impact on the expansion of renewable electricity in Germany (see section 2 for further details). Nevertheless, we recognise that this does not result in zero emissions with regard to our electricity consumption. For a conservative and objective calculation of emissions associated with our office energy use in 2020, we apply the 2019 grid emission factor of 401 gCO_2e/kWh, estimated by the German Environment Agency (UBA, 2020).

Procurement

Activity tracking	We track the procurement of electronic devices, furniture, office supplies, and external IT services, in order to estimate the GHG emissions associated with the supply chains for producing those materials. We collect different information, depending on the data that is available: where suppliers provide their own estimate of the life-cycle emissions associated with the product or service then we track this; where possible, we collect information on the weight of the procured materials; in all cases, we track information on expenditure on all procured materials. We also track the condition of the equipment purchased, since we prefer to procure refurbished equipment where possible to reduce the associated climate impact. We recognise that emissions are incurred through other aspects of our business operations, including the procurement of food and drink as well as contracts with other external service providers, such as legal and banking services. Due to the unavailability of data from service providers, and a high range of methodological uncertainty in the literature assessed, we do not consider a quantitative estimate of these other emissions to be a useful indicator at this stage. As such, we do not yet quantitatively assess these emissions, but we still recognise the importance of these emission sources and pursue measures to reduce them (see section 2).
Emissions intensity	The approach for calculation depends on the information that could be obtained about the procured materials and services. In the case that the supplier provides an estimate of life-cycle emissions, we take this value directly; this is the case, for example, for the procurement of much of our electronic equipment including computers and mobile telephones. Where we procure refurbished equipment, we apply a discount rate to the emissions factor (.75 for laptops and .5 for other electric equipment). This reflects that we are not responsible for the full emissions of production, and provides a further incentive to pursue this more responsible procurement behaviour. Where this is not available, we apply an emissions factor per euro of expenditure on procured material. For the expenditure-based estimation method, we apply global factors from the GHG Protocol Quantis Scope 3 Evaluator (WRI GHG Protocol, no date), adjusted to 2020 prices. We recognise that there is a considerable uncertainty with the emissions estimated through this approach. Depending on the source taken for emission factors then the estimated emissions can vary significantly.

Waste

	We do not quantitatively assess these emissions, due to the poor availability of activity data as well as emission factors for waste treatment in Cologne and Berlin. We still recognise the importance of these emission sources and pursue measures to reduce them (see section 2).
Activity tracking	The amount of general waste disposed is not yet tracked on an office basis, but rather we can only derive an indicative estimate based on the portion of the building costs for waste collection. From the costs that we pay on an annual basis, we can calculate what those costs equate to in terms of the volume of waste. This indicator is a highly conservative representation for two reasons. Firstly, the costs represent a share of the total waste collection costs for all of the building occupants, with the share determined by the floor space that we occupy in the building. Since the nature of our business activities produce little

waste, and since our staff take measures to reduce general waste, it is highly likely that our waste disposal is lower than this calculated share. Secondly, the costs represent a maximum capacity that is agreed with the waste collection service provider, whilst in reality the waste containers are not necessarily filled to 100% capacity before every collection.

Emission factors

We understand that in 2020, no general waste in the cities of Berlin or Cologne goes to landfill. Currently, there is a lack of consensus in the literature on appropriate emission factors to take for incinerated waste and other treatment options, with suggestions ranging from zero-impact to even negative emission balances, depending on the assumptions made.

2 Reducing our emissions

Climate responsibility step 2: We aim to reduce our own emissions as much as possible, with a vision of zero emissions as soon as possible.

NewClimate Institute has a vision to operate with zero GHG emissions as soon as possible.

We regularly assess the options for reducing our own emissions from each emission source, based on the results from step 1 and taking account of the best available knowledge on emission reduction opportunities.

We derive an action plan for reducing emissions each year. The internal price on carbon applied in step 3 of this approach also supports driving decision making towards low-carbon solutions.

For significant sources of emissions where we cannot make substantial emission reductions in the near future, we transparently communicate the challenges we face in tackling those emission sources, to encourage a dialogue on finding solutions for the future.

Travel

The successful execution of projects, as well as constructive dialogue and exchange between colleagues and project partners, requires that NewClimate Institute staff fly occasionally. The majority of flights made by NewClimate Institute staff are to meet with the government representatives in the countries we work. Another significant driver is travel to important events and conferences. Since the intention of this travel is to support the countries and the people that we work with to enhance their capability for climate change mitigation planning and ambition raising, we hope that the benefits for the climate associated with those activities justify the flight activity. Nevertheless, we are very conscious of the substantial climate impact of this travel and implement measures to limit flight activity.

The travel restrictions associated with the COVID-19 pandemic have caused a halt in all work-related travel since March 2020. While this has created challenges for many projects that rely on the presence of our staff in our partner countries or at international meetings, the situation has also led to the development of alternative modes of international collaboration. Online video conferencing has become a norm for events and meetings that sometimes previously could only held in-person. In many cases, this has led not only to reduced travel but also to an increased frequency of meetings and more efficient collaboration with some international partners. Nevertheless, we have found that online collaboration cannot yet address all of the reasons for travel, and some of our activities continue to face difficulties due to the ongoing restrictions. It is highly likely that travel activity will increase again after the travel restrictions related to the pandemic have eased, but we hope to learn from the experiences and developments of the past year to pursue modes of collaboration in the future which are less travel intensive.

In 2020, we produced a more thorough internal travel policy for travel related issues, in order to support travel planning decisions that are driven more by consideration of the climate impact than by cost efficiency considerations. In 2021, we will conduct another internal review of project execution and travel guidelines, to capitalise on experiences and developments in 2020 related to the COVID-19 pandemic that could reduce our travel in the long-term.

In normal circumstances when travel restrictions are not in place, NewClimate Institute employs measures to **avoid** travel activity to the extent possible for the successful execution of our project activities, and to **shift** travel activity to lower emission transport modes where possible. Transport planning decisions must consider cost efficiency and climate effects. In case of conflicts between both objectives, the climate impact overrules cost efficiency.

- Through our internal travel policy, we avoid air travel where suitable rail alternatives exist. This includes a strict prohibition of air travel within Germany and also internationally where there are

rail connections available with less than a 6-hour duration. Staff are encouraged to also consider rail travel for longer connections. In some cases, night trains or an overnight stay en-route might be a suitable, climate friendlier and efficient alternative to air travel, which we encourage, despite usually being associated with higher costs.

- If flying is unavoidable, we avoid business class seats, to avoid the additional climate impact associated with the additional space. Although airfares are sometimes offered at a cheaper rate if booked as a return journey, we only book return flights if we are sure that we will make use of both journeys.
- We invest in high quality video-conferencing equipment, to reduce the need for travel. This significantly reduces the need for travel between our two offices in Berlin and Cologne, as well as to meet with project partners around the world.
- We invest in offices that are centrally and conveniently located, thereby reducing travel activity for daily commuting as well as from visitors, and enabling the use of public transport for that travel.
- NewClimate Institute provides employees with financial support for subscription to public transport tickets, incentivising the use of public transport for daily commuting as well as other personal travel outside of work.
- In 2020, we invested in space for bike storage in both of our new offices in Berlin and Cologne, to incentivise non-motorised daily commuting.

While we are confident that these measures have an impact in reducing travel emissions, we recognise that the large majority of our emissions still come from air travel, where we cannot identify measures that can be taken by our organisation to completely mitigate these emissions in the short-term, despite a willingness to pay for alternative technology options if they existed. This issue can benefit from a more transparent dialogue; we think that an enhanced understanding of businesses' willingness to pay for cleaner options can play an important role to accelerate research and development for less polluting aviation technologies. NewClimate aims to increase dialogue on this issue, partially through raising awareness about the *willingness to pay* which is communicated by the Climate Responsibility approach generally. Further, we continue with various workstreams on policies and investment criteria for Paris alignment in the transport sector notably analysis of the International Civil Aviation Organization (ICAO)'s Carbon and Reduction Scheme for International Aviation and engagement with multilateral, bilateral and national development banks on their transport lending activities.

Office energy use

The current policy environment and commercial building stock in Germany pose significant challenges for some organisations to proactively address energy efficiency in their office space. Most significantly, not-for-profit organisations in Germany face considerable tax disadvantages with regard to rental contracts in new buildings, restricting the ability of not-for-profit organisations to access modern and energy efficient office space.

For office moves in Berlin in 2019 and Cologne in 2021, we invested a significant amount of time to find a space that meets our requirements and high energy efficiency standards. This has been especially difficult in Cologne due to the generally old age of the commercial building stock, as well as limited incentives and interest for landlords to invest in energy efficiency. The new office spaces represent a significant improvement in the energy efficiency performance compared to our previous offices but almost double our rent expenses. There is an urgent need for policy reform to provide incentives to retrofit commercial building stock to ensure that it is not prohibitively time- and cost-intensive for other organisations to take similar actions and decisions. NewClimate initiated and facilitates ongoing

dialogue between the Cologne Mayor's office, the communal business development and other organizations in Cologne facing similar barriers to access energy efficient office space.

Within office spaces, NewClimate Institute and its staff remain conscious of the impact of daily business operations and investment decisions for office energy use. We strongly encourage energy efficient behaviour.

The following existing and planned measures are in place to reduce office energy use and associated emissions:

- In our two offices, NewClimate has a number of policies for behaviour and office use, to minimise energy use. For our Berlin office, we have documented these policies, procedures and responsibilities in internal guidelines. For our new office in Cologne which we occupy from 2021, we will develop building specific updated internal guidelines for responsible office use in 2021.
- For procurement of new or replacement electrical equipment – including all procurement areas ranging from desktop monitors, coffee machines and lighting – we consider energy efficiency as the most important criterion for selection.
- All equipment with stand-by electricity consumption is connected via a switchable power strip. All staff are encouraged to avoid stand-by consumption when equipment is not used.
- We have selected ElektrizitätsWerk Schönau (EWS) as our electricity provider in Berlin and Cologne. While we recognise that our electricity consumption places demand on the national grid, and conservatively apply the average grid emission factor for the quantification of our GHG emissions (see section 1), we understand that through EWS, some of the revenue from our electricity consumption are used to support investments in renewable energy technologies. Our careful selection of EWS as our electricity provider takes into account that there are very significant differences between the services of different suppliers of “green energy” - some suppliers acquire Renewable Energy Certificates, or in the EU “Guarantees of Origin” (Herkunftsnachweise) to compensate for the energy that they source from a range of fossil-fuel powered plants. More ambitious suppliers use revenues directly to invest in their own renewable energy projects. We are careful to choose a supplier that uses revenues from our electricity demand to directly invest in new renewable energy technology capacity installations, and who adopt a high level of stringency in maintaining their portfolios. We believe that EWS fulfil these high standards.
- In 2020 we started the process of assessing the technical feasibility of replacing lighting and electric water heating in our Berlin offices with the most energy efficient technologies. Due to non-standard dimensions for ceiling lamps in our Berlin office, it is not possible to replace the bulbs directly, but we rather would need to invest in the complete replacement of lighting equipment in the ceilings. Our progress with this measure in 2020 has been hindered by the reduced office-presence of staff and the reduced availability of contractors during the lockdowns of the COVID-19 pandemic. We continue to assess the options with an aim to improve the efficiency of our lighting in 2021.

The significant increase in home office during the COVID-19 pandemic has created new challenges with regards to the energy efficiency of our office space. The energy consumption of staff in their working spaces at home will have been a significant source of emissions in 2020, though this is not an emissions source that we currently monitor or can measure. We currently expect that staff to return to the office as the restrictions related to the COVID-19 pandemic ease. We will review this situation in 2021, to derive a responsible approach that is in line with our future working modalities.

Procurement and waste

In 2020, we included procurement into the calculation of our GHG emissions (see section 1) in order to gain a better understanding of important emission sources and potential areas of action. Although there are limitations in the availability of data to assess some of these emission sources, this provides a good indication for action, and we recognise the importance of limiting our impact for these emission sources as far as possible.

There are several challenges that we face as an organisation to reducing emissions from waste. Most notably, we experience that many commercial buildings in Germany do not have adequate provisions for the separation of waste, compared to the waste separation facilities that are provided to the residential sector. We invest time to discuss and seek solutions to problems with our cleaning service providers, and the organisations responsible for servicing the buildings in which we have our office spaces, in order to improve the provision for waste separation.

For issues that are more directly within our control, we take the following measures to reduce our impact from waste and procurement:

- We prefer hardware that can be repaired to extend its lifetime. For laptops and docking stations we mostly procure refurbished equipment to avoid significant emission and resource consumption during production processes. 80% of laptop computers procured between 2014 and 2020 were refurbished models.
- We aim to purchase laptops from manufacturers that publish GHG lifecycle assessments for the specific models, in order to ensure that we can be steered by this information in our selection.
- We avoid printing wherever possible. All paper products procured by NewClimate are 100% based on recycled paper (incl. toilet and hygiene paper).
- Within the office spaces, we provide colleagues with the means to reduce and separate waste, by providing separated waste bins, and reusable containers for employees to transport their food from restaurants to our office during lunch breaks. Through the latter, we expect that the amount of waste avoided by NewClimate staff is significant. During the COVID-19 pandemic, many restaurants no longer allow staff to bring their own containers, for hygiene reasons; we will re-assess the measures that we can take related to food packaging and reusable containers as there is more clarity on how the restaurant industry will address this issue after the restrictions of the COVID-19 pandemic ease.
- We serve only vegetarian meals at internal and external events hosted and financed by NewClimate Institute.
- Coffee, tea and fruit that is provided by NewClimate to its employees comes from responsible sources, taking into account organic farming, local providers or fair-trade rules.
- We procure office supplies, food and drinks from suppliers who can offer low-carbon delivery options, minimal packaging and re-usable containers.

3 Imposing a carbon price signal

Climate responsibility step 3: We impose a price per unit of emissions, based on a price signal aligned with the objectives of the Paris Agreement, for our GHG emissions we cannot yet avoid.

Although our vision is to operate at zero emissions as soon as possible, there are technical and economic reasons why it is not yet feasible for NewClimate Institute to reduce all of our emissions to zero. In particular, alternative technologies do not yet exist commercially to significantly reduce emissions from flight activity.

We consider the concept of "offsetting" emissions to have limitations against the objectives of the Paris Agreement, and not an attractive option for an organisation that understands the need to move towards full decarbonisation in the first half of the century. As such, we do not seek to offset our emissions or to claim "carbon neutrality".

Rather, we apply a price per unit of emissions, to the GHG emissions that we determine in Step 1. We determine the price level based on the best available scientific evidence on the carbon price signal required for alignment with the Paris Agreement objectives. We review this price level each year in the light of new evidence.

NewClimate Institute's determination of the price level for its *Climate Responsibility* approach is informed by the carbon price signal required to put the transformation of the global economy on a pathway compatible with the Paris Agreement temperature objectives.

The High-Level Commission on Carbon Prices surveyed the available scientific literature, concluding that the explicit carbon-price level consistent with the Paris Agreement temperature objectives is at least US$40–80/tCO$_2$ by 2020, provided that a supportive policy environment is in place (High-Level Commission on Carbon Prices, 2017). Informed by this report and allowing for its uncertainties, **NewClimate Institute has imposed a price level of EUR 100/tCO$_2$e for 2020, as we did for the 2014-2019 period**. This is also in-line with the central estimate of *climate change avoidance costs* over the period to 2030 used in the European Commission's 2019 Handbook on the External Costs of Transport (European Commission, 2019). Having reviewed the available literature in 2020, we did not find a newer and more authoritative source of information to inform our price level for 2020. Nevertheless, we see the need to regularly review this and to increase the price level in line with the latest scientific literature in the future.

An alternative approach for the determination of an appropriate price signal could be to reflect the *social cost of carbon*; that is, the estimated cost of damages entailed by anthropogenic climate change, per unit of emissions. An issue with this approach is that it is difficult to objectively define a scope of what qualifies as a social cost, since the impacts of climate change are so far reaching and include indirect impacts and feedback loops. Uncertainties related to the extent of climate impacts, as well as subjective valuations of the economic costs associated with those damages, mean that the range of estimates for the social cost of carbon in the literature span several different orders of magnitude.

The determination of a price signal required to put the transformation of the global economy on a pathway compatible with the Paris Agreement temperature objectives is also not without its challenges. The scientific literature surveyed by the High-Level Commission on Carbon Prices is not uniform in its definition of pathways that are aligned with the Paris Agreement temperature goal. Further research and analysis on different pathways, along with enhanced transparency in the assumptions that underpin those scenarios, could support an improved determination of an appropriate price signal in the future.

4 Supporting initiatives for climate change action

Climate responsibility step 4: With the proceeds, we support initiatives for transformational climate change action that advance progress towards the achievement of the Paris Agreement objectives for mitigation and adaptation.

Approach for project identification and support provision

The proceeds from our internal pricing of emissions are used to support high impact projects for climate change action, with a particular focus on mitigation and adaptation, through grant donations.

We engage in dialogue with other stakeholders, including existing platforms within the voluntary carbon markets, to identify and continuously improve the available options to channel our resources in line with our objectives. We believe there is a significant role for existing voluntary carbon market actors, including those that have previously administered offsetting programmes, to consider new approaches that can address this current gap in the market.

We follow the following principles in the selection of projects:

- We aim to support a broad approach to climate action, currently placing a primary focus on mitigation and adaptation activities but not ruling out other support.
- We aim to target our support to geographies and technologies where government resources are most limited.
- Since we do not claim to “offset” or “achieve carbon neutrality” we do not see “certainty of resulting in emission reductions” as the most important selection criteria. Rather, we recognise that some of the activities with the highest transformation potential and worthiness of support carry a significant risk of not eventually resulting in attributable emission reductions.
- We are interested to support projects that may be in less advanced stages of development but entail considerable potential for transformational change.

NewClimate Institute has partnered with Atmosfair to identify projects and channel finance. Atmosfair, a non-profit organisation based in Germany, has a strong long-standing reputation for helping ambitious organisations and individuals to compensate for their emissions, following a principle of reducing and limiting emissions before compensating for them. Through their existing climate change project portfolio and their exploratory work, we look forward to working together with Atmosfair to identify ambitious emission reduction projects. We aim to continually enhance our ability to identify transformational projects which are aligned with our objectives. We also hope to explore together the development of a platform for other organisations who adopt the Climate Responsibility approach in the future.

Table 2 provides an overview of our climate responsibility donation activity, to date.

Table 2. Overview of donations and relation to estimated emissions.

	2020	2021
Donation sum	EUR 67,500	At least EUR 11,300*
Emissions covered**	675 tCO_2e, including: • First estimate of all quantified emission sources for 2014-2019 period. • Travel-based emissions from 2020.	At least 113 tCO_2e, including: • First estimate of all quantified emission sources for 2020 (48 tCO_2e). • Balance to cover an update to the estimated emissions for 2014-2019 period (+65 tCO_2e). • Travel-based emissions from 2021 (not yet known).
Donation project recipient	Renewable power and heat for Bayanbulag school in Mongolia.	Not yet identified.

* The donation made in 2021 will include coverage of travel-based emissions in 2021, which are not yet known.

** Climate responsibility funds from non-travel related emissions are disbursed in the following year since data availability is too late for inclusion in each years' donation.

Renewable power and heat for Bayanbulag school in Mongolia

NewClimate Institute made a donation of EUR 67,500 in 2020 to support the development of a project for renewable heating and power at a rural school in Mongolia.

SunOyster Systems GmbH and EasyWind GmbH will install an innovative solar co-generation system combined with a low-maintenance wind turbine to provide renewable power and heat to a school in Bayanbulag, a district (sum) of Bayankhongor Province in central Mongolia. The local service shall be organized via Motak LLC of Ulan Bator.

The innovative technology can overcome traditional barriers for renewable heating in harsh subarctic conditions.

Situated between the Kanghai mountains and the central steppe region, Bayanbulag has a dry subarctic climate with mild summers and severely cold winters; temperatures are consistently below freezing level for the majority of the year and reach average lows of -30°C in January. Bayanbulag is the home of ~250 families. The school, with its combined boarding house, gives shelter to hundreds of children from nomadic families in addition. Access to education is generally difficult for nomadic families and would otherwise mean separation of children and their families over long distances. The school in Bayanbulag has in autumn 2020 been extended with new building parts to increase its capacity to 650 students, of which some are also hosted in the boarding house for parts of the year. The new buildings are provided by the central government, while the installation of a heating system is the responsibility of the school and the local administration.

Like most buildings and gers in the region, Bayanbulag school has up to now used coal for heat production which is currently the cheapest available energy source. If burnt in living spaces, the emitted fine dust has detrimental health effects. Given the harsh climate conditions of the region, especially in winter months, it is difficult to reliably meet the school's heating requirements with most mature renewable energy heating technologies.

The central part of this project is a new innovative solar co-generation system, called SunOyster 16 heat and pvplus (12 kW_{th}). Its development was supported through funding from the European Union's Horizon 2020 research and innovation programme. The SunOyster's mirror concentrates solar radiation

on a 4m long hybrid receiver which converts the concentrated radiation into heat of up to 170°C and electricity (solar co-generation, CPVT). Well protected within a hermetically closed glass tube, glass lenses concentrate the radiation a second time in order to reach a total concentration of 1250x. This radiation hits the III-V concentrator cells with 44% electric efficiency to generate power. The co-generated heat is conducted through the aluminium pipe to the heat transfer fluid (water, water with glycol or potentially thermal oil) circulating in the tube. This fluid cools the cells and transports the heat to the user or the storage. Altogether, the receiver reaches up to 30% electric efficiency and 45% thermal efficiency in relation to the direct radiation, representing one of the highest solar efficiencies worldwide[2].

This system is combined with a wind turbine (EasyWind 6) for additional electricity generation. The wind turbine is a small and very low maintenance model (19 meters high). It can be installed and maintained without the need for a crane. The engine can be raised and lowered manually. There is no software needed to operate the turbine according to changing wind conditions, the turbine regulates itself with mechanical components. The wind turbine is very robust and thus suitable to reliably operate under these extreme conditions. Availability of wind and sun are largely complementary over the year and day, making SunOyster and EasyWind a promising combination in Mongolia.

This combined system will produce electricity and heat to deliver approximately 18,000 kWh heat and 19,140 kWh electricity to the school each year, equivalent to approximately 85% of the school's total annual energy demand. The advanced solar co-generation system generates higher water temperatures than most existing solar thermal technologies; water is heated to around 60-70°C and can thus also supply traditional heating systems. The installation of a buffer tank for heat is included in the project design.

The project will demonstrate replicable GHG emission reductions from a hard-to-abate emissions source.

The heating sector in Mongolia is an example of an emission source where new and less mature technologies must be demonstrated to improve the "accessibility" of further efforts to decarbonize the sector. Global efforts to reach net-zero and eventually negative GHG emissions in the second half of this century requires the identification of innovative solutions for hard-to-abate emission sources, where the current lack of affordable GHG emission abatement technologies casts uncertainty on climate change mitigation potentials.

The project will lead to annual emission reductions of approximately 340 tCO_2e over the first ten years of its operation, at a marginal abatement cost of around EUR 240/tCO_2e, by replacing the consumption of electricity and direct coal combustion.

This relatively high marginal abatement cost, in combination with the higher risk level entailed by any pilot activity, represents a barrier for the exploration of this technology in the Mongolian context. The deployment of the technology in this project is an important first step to demonstrate the technology, which could hopefully be replicated at other sites in Mongolia and similar climates. The demonstrated renewable heating system may represent a solution to the heating challenge of 50 other new schools in Mongolia which are under construction, as well as other buildings in both rural and urban areas. Initial estimates indicate that the system costs could be reduced by approximately one half as the technology matures and local value chains develop.

[2] For more details and information, we refer to SunOyster's website: https://www.sunoyster.com/products/

Emission reduction outcomes will remain with Bayanbulag school and support climate change mitigation ambition raising in Mongolia.

Any emission reduction impact caused by the project should be counted towards the emission inventories of Bayanbulag school and the Mongolian People's Republic. None of the project implementing partners – including NewClimate Institute, atmosfair, SunOyster, EasyWind and other contractors – will claim the emission reduction outcomes towards the neutralization of their own emissions, nor should any other potential support providers in the future. This means that no carbon credits will be generated from the project and transferred to the project implementing partners or other parties, now or in the future.

Since the accounting of any emission reduction impacts remains within Mongolia, the project – and other replicating projects that follow the same support model – could support Mongolia to raise the ambition of its climate change mitigation targets in the future. By identifying and implementing solutions in areas that are outside of the reach of the national government, such projects unlock additional mitigation potential that can be reflected in national climate targets.

The renewable heating system improves the air quality and health of children in Bayanbulag.

The positive effects on air quality and health can be even more significant in urban contexts. Once the technology has proven its feasibility under Mongolian conditions, the further roll-out also in larger cities could mean a turning point for a higher number of citizens.

Local technicians will be trained to service and repair the renewable heating system.

The project will be implemented alongside training exercises that seek to build up local expertise for servicing the renewable heating system, with the intention to minimize reliance on the international technology provider. SunOyster envisage the development of a local value chain resulting in significant job creation in Mongolia, should the system be replicated across more sites in Mongolia in the future.

By the nature of the project being a first of its kind in Mongolia, there remains a degree of uncertainty regarding potential issues that might arise, and the operational expenditures incurred to resolve them. However, it is estimated that the operational expenditures of operating the system with support from local technicians should lie well below the school’s current annual costs for fuel, and the project partners commit to ensuring that this remains the case. atmosfair will manage this project throughout the project lifetime and support the school to render it successful.

The “high-hanging fruit” project could not happen without the external investment.

The installation of the SunOyster system in Bayanbulag requires an upfront capital expenditure of approximately EUR 80,000, which is financed through a grant donation of EUR 67,500 from NewClimate Institute and approximately EUR 12,500 from the Cultural Association (former students of the school in Bayanbulag).

The high marginal abatement costs of the project make this clearly out of the reach of other sources of carbon finance, as well as being out of the accessible reach of the national government’s own climate change mitigation action. Bayanbulag school has not identified any other investment options, and the renewable heating system would not be installed without the external investment from NewClimate Institute and atmosfair.

5 Mainstreaming emissions pricing in accounting processes

Climate responsibility step 5: We aim to mainstream the pricing of our climate impact through our accounting processes, to raise awareness and integrate these costs into decision making processes both internally, as well as with funders and partners.

To improve the mainstreaming of emissions pricing in accounting processes, internally and with our funders and partners, NewClimate Institute aims to implement the following measures:

- Since 2020, NewClimate travel expense reports include the costs of the emissions related with the travel, alongside the quantification of the climate impact from flights and other modes of transportation. This serves to raise awareness and also provide evidence of our costs that can be made available to clients.
- Emissions from project specific activities, such as project-related travel, will be attributed as cost items to the project numbers of the projects that they refer to. In 2020, we developed and agreed upon an approach to implement this that is in line with tax regulations. However, it was decided to apply this measure only as of 2021 due to the temporary ceasing of project-related travel during the COVID-19 pandemic.
- We aim to communicate GHG emissions that can be attributed to specific projects, and their associated costs, to clients, and also aim to include them in the costs that we report to the client for the payment of our services or reimbursement of our expenses. We anticipate that some of our clients may not initially agree to cover these costs, but through our communication we attempt to raise awareness and convince them to adopt climate responsible procurement practices. Due to the insignificant volume of project-related travel during the COVID-19 pandemic in 2020, we have not yet been able to apply this measure, but aim to do so when project-related travel resumes in 2021.
- We attempt to foresee costs associated with our climate impact and aim to include them in our proposals for new projects. We aim to raise awareness with our funders of the need to recognise and seek to address climate impacts associated with their service procurement to minimise the risk of eroding our cost competitiveness. Likewise, we will attempt to have the recognition of these costs included in new contracts with clients and partners.

Since many of these measures were planned to begin in 2020 and have been affected by the drop in travel-related emissions during the COVID-19 pandemic, we have not yet gained any significant feedback or experiences from colleagues and funders, with regards to the implementation of these measures. In future iterations of the annual Climate Responsibility implementation report, we will report on our experiences in the attempted implementation of these measures, along with the identification of new measures for enhanced mainstreaming in accounting processes.

6 Documentation and transparent communication

Climate responsibility step 6: We transparently communicate the details of this approach and its implementation on a regular basis.

Transparent communication is a key foundation of this approach. Constructive collaborative dialogue is required to overcome challenges and share lessons learnt in order to identify and address issues that can support enhanced action and accelerated decarbonisation.

Through our communication, we aim to prompt discussion and encourage replication amongst other organisations. We note that several organisations have taken the Climate Responsibility approach as a blueprint for their own strategies in 2020. We solicit feedback on our own Climate Responsibility approach to continuously improve and ensure its relevance.

NewClimate regularly documents the details of the Climate Responsibility approach and its implementation. Table 3 gives an overview of how the various components of the Climate Responsibility implementation have been documented for the 2020 period.

Table 3: Checklist for documentation of Climate Responsibility implementation

Component	Documentation for 2020
Overview of the organisation's GHG emissions	Introductory section of this report
Scope of emissions accounting	Section 1 of this report
Methodological assumptions for emissions accounting	Section 1 of this report
Details of actions for reducing own emissions in 2021	Section 2 of this report
Determination of price signal aligned with the Paris Agreement objectives	Section 3 of this report
Details on how the funds have been used to support climate change action	Section 4 of this report
Details of measures to be taken to improve mainstreaming of emissions pricing in accounting processes	Section 5 of this report
Report on challenges experienced in implementing each of the Climate Responsibility steps	Discussed in each section of this report.

Annex I: GHG emission footprint calculation

Table 4. Detail of activity data for emission sources

Emission source	Activity unit	2020	2019	2018	2017	2016	2015	2014	Comments
Total number of staff	#	32.3	28.0	25.2	18.2	12.8	8.4	7.0	
Scope 1									
No scope 1 emission sources.									
Scope 2 (Office energy)									
Electricity (Berlin)	kWh consumption	8,186	6,510	3,352	2,486	1,606	1,145	978	
Electricity (Cologne)	kWh consumption	8,895	12,715	10,042	7,448	4,812	3,431	2,929	
Spatial heating & cooling (Berlin)	kWh consumption	22,806	20,181	23,131	17,155	11,084	7,903	1,124	2020 data is a preliminary estimate.
Spatial heating (Cologne)	kWh consumption	19,893	17,603	17,174	12,737	8,229	5,868	835	
Scope 3 (Travel)									
Flights	journeys	4	73	61	46	52	51	18	
Rail	p-km travelled	20154	Not tracked; emissions back cast from 2020 (see Table 6)						
Long-distance bus	p-km travelled	0	Not tracked; emissions back cast from 2020 (see Table 6)						
Taxi and car	p-km travelled	38	Not tracked; emissions back cast from 2020 (see Table 6)						
Scope 3 (Procurement)									
Notebook computers	Units purchased	11	6	8	11	6	8	0	
Mobile phones	Units purchased	10	9	7	4	1	0	0	
Other electronic equipment	Expense (EUR)	199	190						
Office furnishing and equipment	Expense (EUR)	14,636	9,958	6,114	14,130	7,638	10,726	97	
Office supplies	Expense (EUR)	908	344	266	49	582	132	0	
IT and cloud services	Expense (EUR)	9,264	11,829	10,659	9,138	11,896	4,551	245	

See section 1 for a description of how activity is estimated for each emission source.

Table 5. Detail of emissions factors applied for emission sources.

Emission source	Unit	2020	2019	2018	2017	2016	2015	2014	Comments
Scope 2 - Office energy									
Electricity	gCO2e per kWh	401	401	468	485	523	527	557	2019 value is used for 2020, as the most recent available.
Heating and cooling - Berlin	gCO2e per kWh	219	All years assumed equal.						Calc. assuming 92% efficiency of natural gas combustion.
Heating and cooling - Cologne	gCO2e per kWh	251	251	251	222	217	228	229	2018 value is used for 2019 and 2020, as the most recent available.
Scope 3 - Travel									
Flights	*See section 1*								
Rail	gCO_2e per p-km	32	Not used; emissions back cast from 2020 (see Table 6)						
Long-distance bus	gCO_2e per p-km	29	Not used; emissions back cast from 2020 (see Table 6)						
Taxi and car	gCO_2e per p-km	220.5	Not used; emissions back cast from 2020 (see Table 6)						
Scope 3 - Procurement									
Notebook computers	Average $kgCO_2e$ per unit	782	278	437	309	332	443	-	Max. end of range from manufacturer product reports; including discount factors applied to refurbished equipment.
Mobile phones	Average $kgCO_2e$ per unit	86	Unknown. Assumed equal to 2020 value.						
Other electronic equipment	gCO_2e per EUR expense	755.40	All years assumed equal.						Based on GHG Protocol Quantis tool, adjusted to 2020 prices
Office furnishing and equipment	gCO_2e per EUR expense	316.40	All years assumed equal.						
Office supplies	gCO_2e per EUR expense	662.14	All years assumed equal.						
IT and cloud services	gCO_2e per EUR expense	279.78	All years assumed equal.						

See section 1 for further explanation on the emission factors applied for each emission source.

Table 6. Detail of GHG emission totals across emission sources

Emission source	Unit	2020	2019	2018	2017	2016	2015	2014	Comments
Total number of staff	#	32.3	28.0	25.2	18.2	12.8	8.4	7.0	
Scope 1									
No scope 1 emission sources.									
Scope 2 - Office energy		**16,837**	**16,547**	**15,644**	**11,400**	**7,564**	**5,478**	**800**	
Electricity	$kgCO_2e$	6,850	7,709	6,268	4,818	3,357	2,412	363	
Heating and cooling	$kgCO_2e$	9,987	8,838	9,375	6,582	4,208	3,066	437	2020 is preliminary estimate.
Scope 3 - Travel		**10,196**	**240,799**	**180,271**	**84,782**	**35,886**	**41,130**	**36,832**	
Flights	$kgCO_2e$	9,543	237,252	176,810	82,215	34,228	39,948	36,664	
Rail	$kgCO_2e$	645	3,188	3,110	2,306	1,490	1,063	151	
Long-distance bus	$kgCO_2e$	-	-	-	-	-	-	-	
Taxi and car	$kgCO_2e$	8	360	351	260	168	120	17	
Scope 3 - Procurement		**19,881**	**14,317**	**10,410**	**13,701**	**10,127**	**11,207**	**367**	
Notebook computers	$kgCO_2e$	8,606	1,665	3,493	3,404	1,991	3,540	-	
Mobile phones	$kgCO_2e$	860	602	559	344	43	-	-	
Other electronic equipment	$kgCO_2e$	2,551	5,178	1,148	2,784	1,422	2,690	226	
Office furnishing and equipment	$kgCO_2e$	4,601	3,015	1,848	4,391	2,019	3,230	-	
Office supplies	$kgCO_2e$	672	548	380	221	1,324	474	72	
IT and cloud services	$kgCO_2e$	2,592	3,310	2,982	2,557	3,328	1,273	69	
Total	**$kgCO_2e$**	**46,915**	**272,154**	**206,803**	**110,237**	**53,807**	**57,978**	**38,022**	

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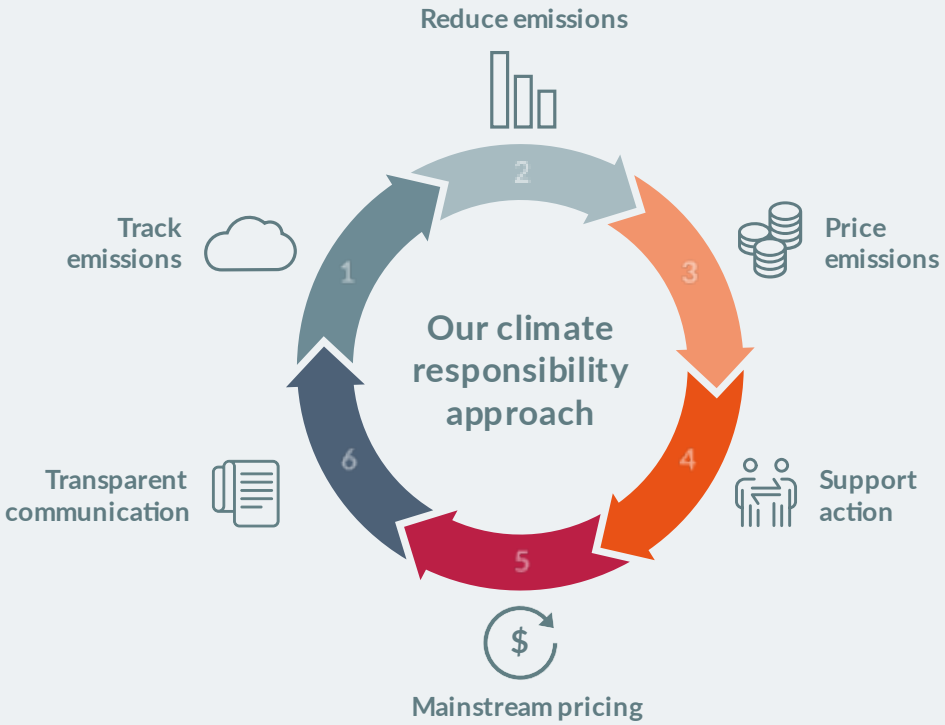

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