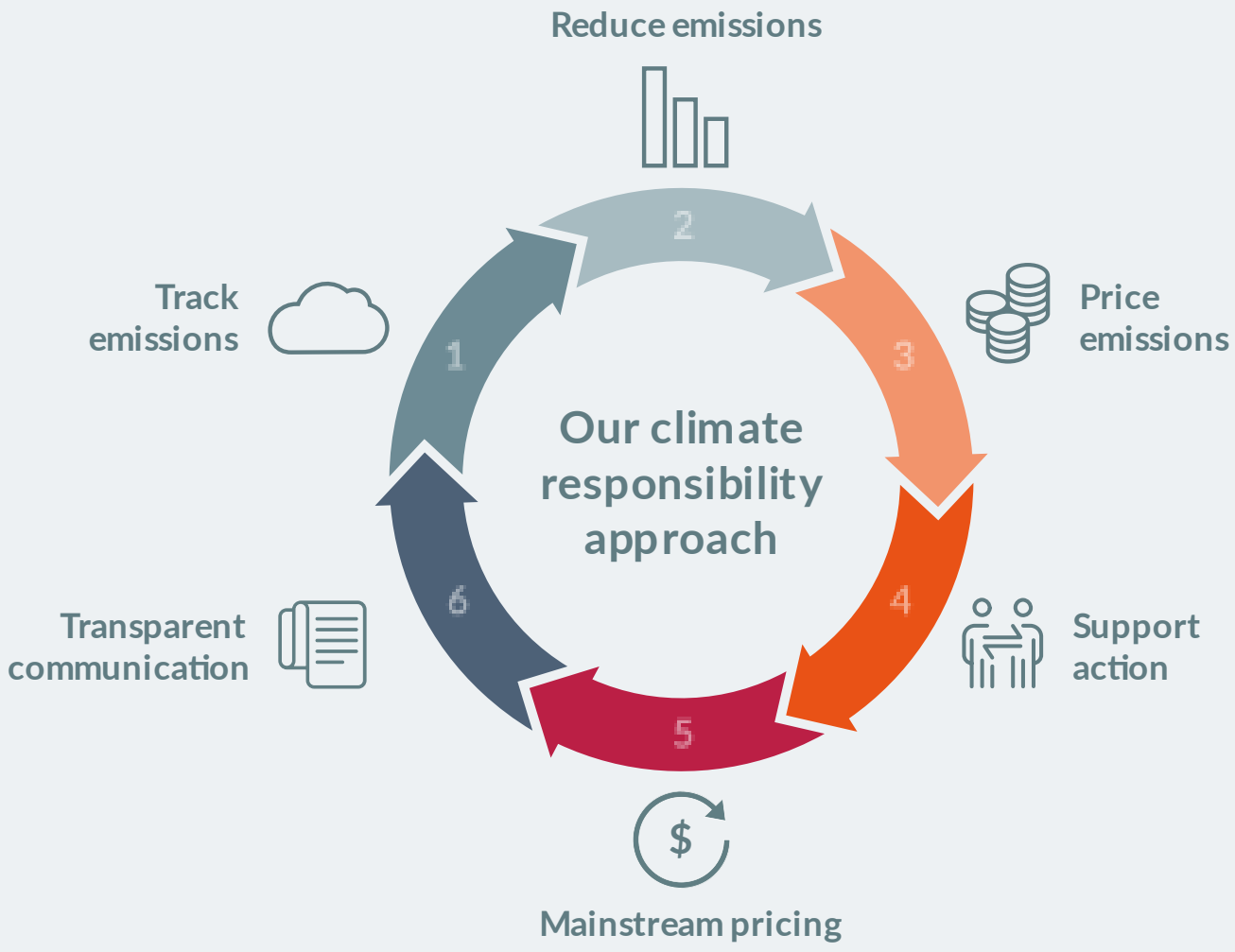
Climate Responsibility 2023

Communication of measures to address our climate footprint



NEW CLIMATE INSTITUTE

December 2023

Climate Responsibility 2023

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.**

Step 1: Track, and Step 2: Reduce 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.

The sub-sections below describe the approach taken for estimating and calculating activity and emission factors for each emission source. Full quantitative details on activity, emission factors and emissions for each emission source over the period 2014-2021 are included in Annex I.

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 real-zero GHG emissions as soon as possible. We wish to transparently stress that we do not claim to have, or to be on, a clear pathway to achieve this vision, due to the lack of decarbonisation options for key sources of emissions.

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.

Overview of emissions

Figure 1 and Table 1 give an overview of NewClimate Institute's emissions across all relevant scope 1, scope 2 and scope 3 emission sources from 2014 to 2022. Average annual emissions from these emission sources in this period amount to an estimated 114 tCO_2e, although with significant differences between years due to the growth of the organisation, and the impacts of the COVID-19 pandemic. During this period, emissions from these sources amounted to an estimated 1,023 tCO_2e. Emissions in 2022, at 163 tCO_2e, were 40% lower than pre-pandemic levels but grew almost four times from 2021, due to the resumption of business travel.

The majority (60%) of NewClimate Institute's GHG emissions in 2022 came from business travel. 81% of these emissions derived from air travel, 4% from ground-based travel modes and an estimated 15% from hotel services. 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. Further considerations on this source of emissions can be found in the section *Business travel emissions (scope 3.6)*.

Aside from business travel emissions, our most significant emission sources are emissions from purchased goods and services (scope 3.1) and emissions from purchased heat and electricity (scope 2), which accounted for approximately 11% and 9% of the organisation's average annual GHG emission footprint from 2014 to 2022 respectively. Emissions from purchased goods and services derives mostly from the procurement of IT equipment and office furnishings, for our office spaces in Berlin and Cologne.

Average emissions from employee commuting (scope 3.7) and waste (scope 3.5) are in the order of 1% and 0.5% of our total emissions, respectively, although the estimates for these emission sources contain a considerable degree of uncertainty and are presented for transparency and orientation, rather than for meaningful analysis.

Figure 1 and Table 1 show a clear trend of increasing non-travel-related 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. A more detailed description of emissions and measures to reduce emissions from each emission source can be found in the following sections.

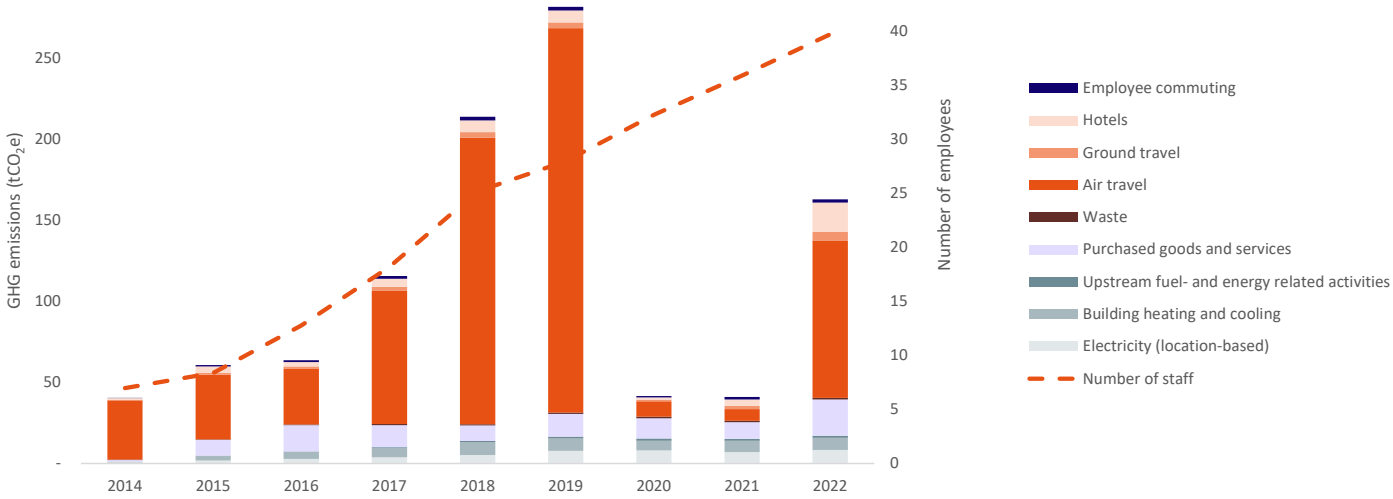


Figure 1: Overview of GHG emission footprint (2014-2021)

Table 1: Overview of GHG emission footprint (2014-2022)

Scope	Emissions source		2014	2015	2016	2017	2018	2019	2020	2021	2022
Scope 1 emissions			-	-	-	-	-	-	-	-	-
Scope 1	Stationary or mobile combustion and fugitive emissions		*Emission source is not relevant for the organisation. No direct combustion or fugitive emissions.*								
Scope 2 emissions			**1.1**	**4.6**	**7.0**	**9.6**	**13.2**	**15.5**	**14.0**	**14.0**	**16.0**
Scope 2	Emissions from purchased energy	Electricity (location based)	0.7	2.0	3.0	3.9	5.3	7.9	8.2	7.1	8.4
		Building heating	0.4	2.6	4.0	5.7	7.9	7.6	5.9	6.9	7.6
Scope 3 emissions (upstream)			**39.5**	**56.2**	**56.9**	**106.1**	**200.9**	**266.4**	**27.7**	**27.1**	**147.1**
Scope 3.1	Purchased goods & services		1.0	9.8	16.4	13.6	9.6	14.0	12.5	10.3	22.4
Scope 3.2	Capital goods		*Emission source is not relevant for the organisation. No capital goods.*								
Scope 3.3	Fuel- and energy related activities (not included in s1 or s2)		0.1	0.3	0.4	0.5	0.7	1.2	1.4	1.1	1.2
Scope 3.4	Upstream transportation		*Emission source is not relevant for the organisation. No direct contracting of upstream transportation services. Transport-related emissions of purchased goods and services are included in scope 3.1 calculations.*								
Scope 3.5	Waste		0.2	0.3	0.4	0.6	0.8	0.8	0.9	0.9	0.9
Scope 3.6	Business travel	Air travel	36.7	39.9	34.2	82.2	176.8	237.3	9.5	7.3	97.2
		Ground travel	0.2	1.2	1.7	2.6	3.5	3.5	1.0	1.9	5.2
		Hotels	1.2	4.0	2.7	4.9	7.2	7.3	1.4	4.0	18.2
Scope 3.7	Employee commuting		0.1	0.8	1.1	1.7	2.3	2.2	0.9	1.6	1.9
Scope 3.8	Upstream leased assets		*Emission source is not relevant for the organisation. No leased assets.*								
Scope 3 emissions (downstream)			-	-	-	-	-	-	-	-	-
Scope 3.9	Downstream transport and distribution		*Downstream emission sources are not relevant for the organisation. The organisation has no downstream emissions associated with the services provided, nor any downstream leased assets, franchises or investments.*								
Scope 3.10	Processing of sold products										
Scope 3.11	Use of sold products										
Scope 3.12	End-of-life treatment of sold products										
Scope 3.13	Downstream leased assets										
Scope 3.14	Franchises										
Scope 3.15	Investments										
Total			**40.6**	**60.8**	**63.8**	**115.7**	**214.1**	**281.9**	**41.7**	**41.1**	**163.1**

Purchased energy (scope 2 and scope 3.3)

GHG emissions footprint

Purchased energy was a significant source of GHG emissions also in 2022, accounting for an estimated 16 tCO_2e or 10% of NewClimate Institute's total emissions footprint that year. The proportion is reduced compared to the previous year due to revived travel activities after the impact of the pandemic. For comparison purchased energy emissions account for an estimated 34% of the organisation's GHG emissions footprint in 2021. NewClimate Institute's GHG emissions from purchased energy are classified into emissions associated with electricity and heat consumption (scope 2), and upstream energy emissions stemming from the same sources (scope 3.3).

Activity tracking

Since 2019, we calculate our emissions from office energy use based on measured and tracked energy consumption data for electricity and heat. The data we have obtained from building owners for 2020 to 2022 remains incomplete, leading us at least partially to preliminary estimates for these years; until data is available. For our Berlin office we based a preliminary estimate for 2020 and 2021 on the average energy consumption per full-time equivalent staff in 2019. We will update our 2020 to 2022 activity data once this information is made available to us. We are in exchange with our landlord in Berlin to solve this data gap.

NewClimate Institute's offices from 2014 to 2020 did not have air conditioning, but centralised cooling became available since July 2020 in Berlin and since February 2021 in Cologne. Information about the centralised cooling system and consumption data is still incomplete in NewClimate Institute's Berlin office while a cooling effect can hardly be noticed. In Cologne cooling (and heating) is implemented through a centralised ventilation system and thermal activation of building structures. This system is efficient but does not give the user full control to adjust supply to actual demand in all situations. It is for example not possible to switch off cooling or heating completely which leads to unnecessary consumption. For the first time we have received activity data for 2021 for our Cologne office in 2023. Due to the limited office use as a result of the pandemic and our energy efficient behaviour we have successfully reduced our cooling and heating demand to what the centralised ventilation system provided us. Extra cooling (0 kWh) and heating (161 kWh) was used only to an insignificant extent. Responsible energy use and energy efficient behaviour must also have led to below average energy use from the centralized system. However, this is not visible to us since the energy consumption is assigned to the different tenants based on square meter floor space and not based on actual consumption.

Our energy consumption tracking includes energy within our office spaces as well as energy for shared building services. Within our office spaces we have to a certain extent direct control over our energy consumption, and we can partly be confident that the values tracked and measured accurately reflect our energy use (expect centralised ventilation system in our Cologne office). 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 floor space or building costs.

Due to the growth rate of the organisation in its initial years, NewClimate Institute 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 2015-2017 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 2022, we applied emissions factors of 434 gCO_2e/kWh to electricity consumption in both offices, 180 gCO_2e/kWh to district heating in Cologne and 219 gCO_2e/kWh to gas-fired heating and cooling in Berlin.

A gas-fired combined cooling, heat and power (CCHP) unit within the buildings of NewClimate Institute's office in Berlin supplies heating and cooling to the building and electricity to the grid. The cogeneration of electricity with cooling and heating increases 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. Heating in Cologne was provided through a district heating connection. Due to the lack of complete data on cooling energy consumption in the year 2020 to 2022, we have not been able to fully estimate this emission source. We have evidence that no cooling directly applied to our Cologne office occurred in 2021. Energy use related to cooling consumption caused by the centralised ventilation system is reported combined with heating consumption. Cooling data for Berlin and further updates will be added to our GHG emissions inventory in subsequent years as soon as they become available.

In the absence of better information on the emissions factor of district heating from the city of Cologne, we continue to use a default value of 180 gCO_2e/kWh from the German Building Energy Law (Bundesamts für Justiz, 2022). We tried to get the annual emissions factors through exchange with the local energy provider. Unfortunately, RheinEnergie refused to make this data public or rather explained it is zero due to mostly CHP based generation which is obviously not plausible. We expect that the transparency requirements in the new Fuel Emissions Trading Act ("Brennstoffemissionshandelsgesetz" (BEHG)) will force publication of this data in the near future. 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 2014-2021 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 Institute 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 *measures to reduce emissions* below for further details). Nevertheless, we recognise that this does not result in zero emissions with regard to our own electricity consumption. For a conservative and objective

calculation of emissions associated with our office energy use in 2022, we apply the location-based accounting method using the 2022 grid emission factor of 434 gCO_2e/kWh, estimated by the German Environment Agency (Umweltbundesamt, 2023).

For upstream electricity emissions (scope 3.3) including fugitive emissions and those associated with transmission and distribution losses, we apply an emissions factor of 64 gCO_2e/kWh, estimated by the German Environment Agency (Umweltbundesamt, 2023).

Trends

Figure 2 presents trends from 2015 to 2022 for electricity consumption, heat consumption, and GHG emissions. **This information is presented for the purpose of full transparency; the information has limited value for analytical interpretation due to severe limitations in the currently availability data,** as outlined above**.** Against the backdrop of the incomplete available data, it is difficult to determine what effect the pandemic has had on consumption levels between 2020 and 2022 and whether our observations represent meaningful trends.

Nevertheless, a clear trend is that emissions from purchased energy have continued to increase throughout the period from 2015 to 2022, as the organisation grew from 7 to 40 staff and to increasingly professionally equipped office buildings in commercial spaces. We now expect to remain in our current office locations over the longer-term and hope to see a clear trend of decreasing emissions per employee as we continue to take actions to improve the efficiency of our energy consumption in these buildings.

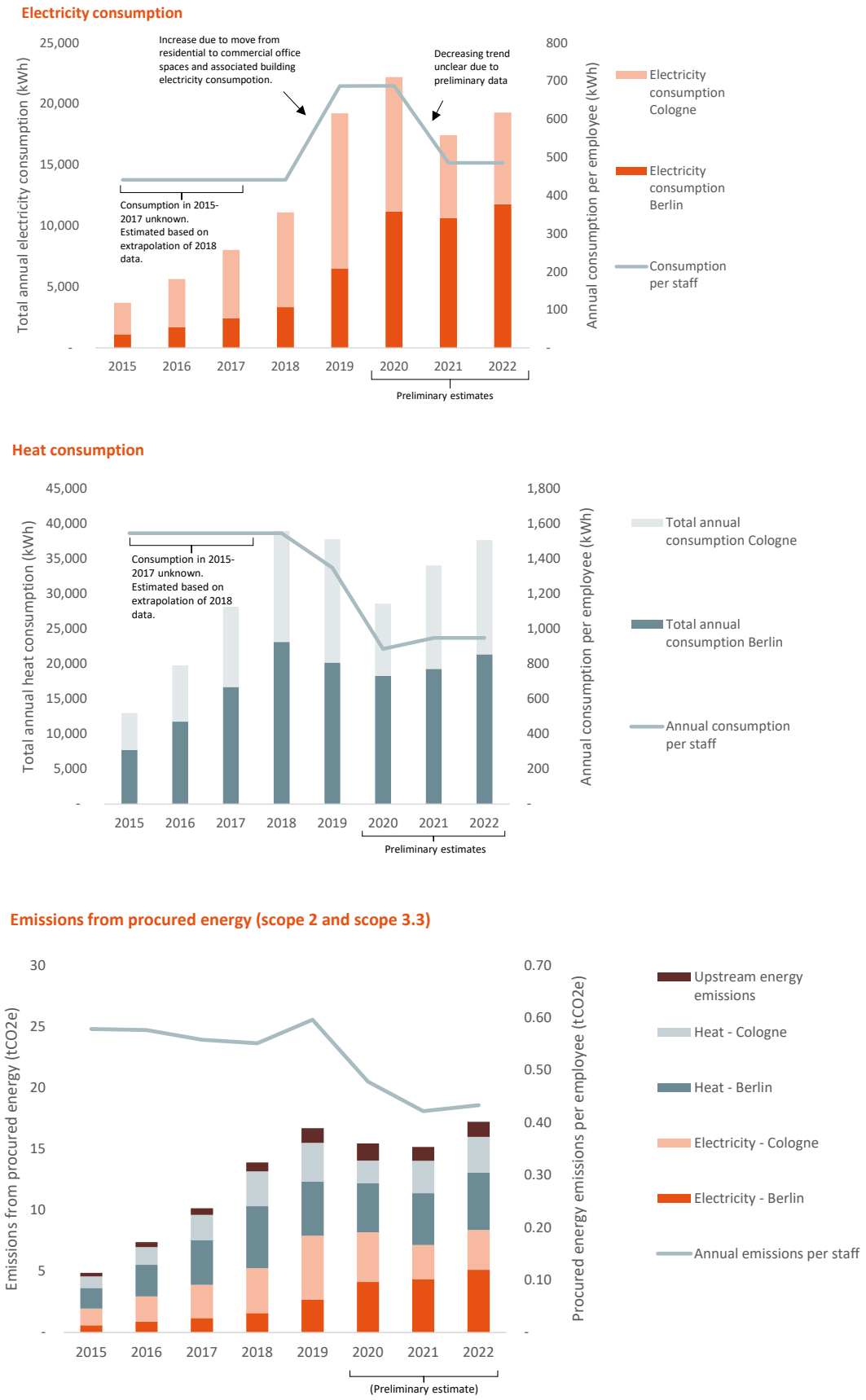


Figure 2: Electricity consumption, heat consumption and associated GHG emissions

Measures to reduce emissions

Use of efficient buildings

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. 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. 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 Institute initiated and facilitated a multi-year 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. Even though the initiative seemed promising over a long period of time, the city of Cologne's interest seems to have come to a standstill. It is therefore currently not being pursued further.

Photovoltaic installation

We initiated a process for a rooftop solar photovoltaic installation at our Berlin office location. In 2022 we concretely entered into contract negotiations with the landlord and selected a contractor to make the first assessment. We expect the installation to supply the majority of our electricity consumption in Berlin.

Electricity procurement

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, 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.

Equipment efficiency

In 2022 we replaced all fluorescent ceiling lamps in our Berlin office with LED lamps. This investment reduced our consumption of electricity for lighting in Berlin by approximately to two thirds. We have deactivated rather than replacing the inefficient electric water heaters in our Berlin office, where we only use cold water. The water heater for the shower may be turned on for use, but is also set to cold per default.

In Cologne, we moved into our new office space in February 2021. Since then, we implemented several efficiency measures, including a complete overhaul of the equipment in the server room, decommissioning of unnecessary equipment and timer installation for remaining equipment (switch off outside office hours). Electric water heaters and decentralised air conditioning system were switched off. These measures already led to halving the electricity consumption compared to the previous tenant in the same office space. We have no access to the general settings of centralised heating, cooling and ventilation system. We tried to convince the landlord to make certain changes and wrote detailed instructions for staff to adapt the individual behavior to ensure efficient use of the office. For 2023, we plan to replace all remaining energy saving lamps by 50% more efficient LEDs.

For procurement of new or replacement electrical equipment in both offices – 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 purchased portable power meters to detect unexpectedly high power consumption of certain devices. We have offered and recommended that employees borrow these devices to test their own devices at home. This led some colleagues to decide to invest in more efficient equipment at home.

Behavioural policies

In our two offices, NewClimate Institute has a number of policies for behaviour and office use, to minimise energy use. The staff guidelines for both offices were updated in 2021. The guidelines include policies, procedures and responsibilities for the reduction of energy consumption for appliances, lighting and heating as well as reduction and recycling of waste.

Home office

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 and 2021, though this is not an emissions source that we currently monitor or can measure. Although the organisation allows for some flexibility, during 2022 the default work location was defined again as being in the office. We will continue to review this situation, to derive a responsible approach that is in line with our future working modalities.

Purchased goods and services (scope 3.1)

GHG emissions footprint

Purchased goods and services has accounted for an estimated 11% of NewClimate Institute's accumulated emission footprint between 2014 and 2022. In 2022 it amounted to an estimated 22.4 tCO_2e. Under this category, we estimate the emissions arising from the procurement of laptops, mobile phones, other electronic equipment, office furnishings, office supplies and equipment, and IT services.

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.

Emission factors

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.

Trends

Figure 3 presents trends from 2015 to 2021 for purchased goods and services. Emissions related to office furnishings and electronics have been largely associated with our organisational growth and our moves to new office locations, and the relevance of these emission sources may decrease in the future as we are now established in longer-term contracts for professionally

equipped offices. We have updated the estimated emission levels for the years 2018-2021 based on newly available device specific emission factors published by HP; these emission factors are more precise and significantly lower than previous estimates published by the manufacturer. Accordingly, our estimated emissions footprint for the procurement of laptops has significantly decreased.

We see a considerable uptick in emissions from purchased goods and services in 2022. This was caused by the return to the office following the COVID-19 pandemic, and the need to equip and furnish the office to accommodate the growth of the organisation that took place during the years of the pandemic. This is a trend that we expect to see continue into 2023 and 2024 as we expand our working spaces.

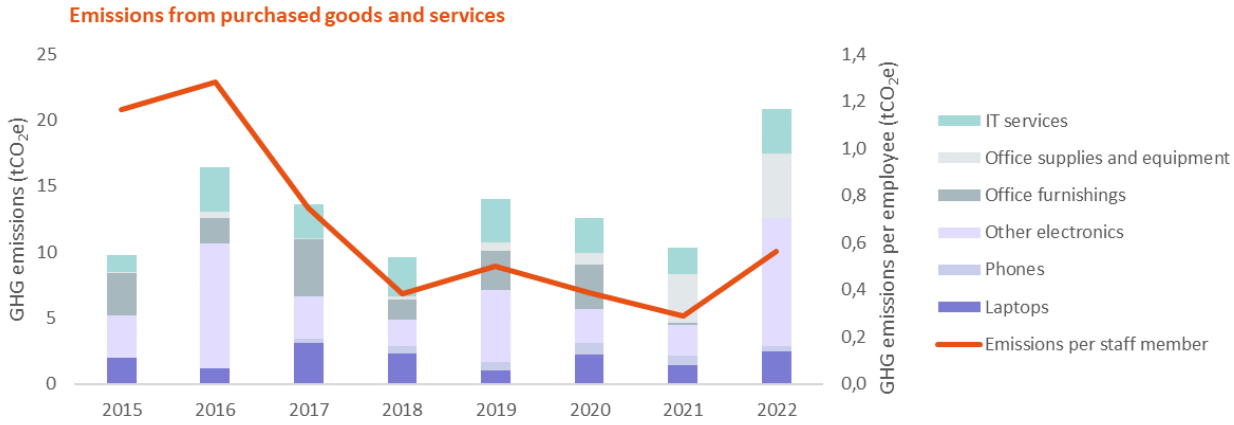


Figure 3: Emissions from purchased goods and services

Measures to reduce emissions

Extend equipment lifetime

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. 70% of laptop computers procured between 2014 and 2022 were refurbished models.

Conscious procurement

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.

Coffee, tea and fruit that is provided by NewClimate Institute 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.

Reduce material use

We avoid printing wherever possible. All paper products procured by NewClimate Institute are 100% based on recycled paper (incl. toilet and hygiene paper).

IT services

We take active measures to limit the storage space we use in cloud services in our policies for data archiving, retention and deletion,

despite the low cost of storage space and the proportionally high cost of investing time in those actions. Where possible and as far as compliant with data protection regulations, we select data centres and IT services from geographical locations with lower grid emission factors.

Vegetarian meals We serve only vegetarian or vegan meals at internal and external events hosted and financed by NewClimate Institute.

Waste (scope 3.5)

GHG emissions footprint

We estimate – with a considerable degree of uncertainty – that emissions from waste may account for about 0.6% of NewClimate Institute's emissions between 2014 and 2022. In previous years, we did 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. Since the availability of this information did not change in the past year, we have decided to develop high level estimates for the sake of orientation and transparency, on the understanding that these are high level estimates with a considerable degree of uncertainty, and that these calculations would be revised again in the future when better information is available. Despite the uncertainties, we still recognise the importance of emissions from waste and pursue measures to reduce our impact.

Activity tracking The amount of general waste disposed is not tracked precisely on an office basis. We make a highly conservative estimate that we dispose a maximum of 80 litres of general household waste per office per week, on the basis that our 80 litre bins are emptied once per week. In reality the waste containers are not necessarily filled to 100% capacity before every collection. This leads to an estimated disposal of 8320 litres, equivalent to approximately 0.82 tonnes, per year in our current office locations. For previous years, we have extrapolated the trend of disposed quantities per employee to derive a high-level indicative estimate.

Emission factors Due to regulation, no general waste in the cities of Berlin or Cologne goes untreated 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. In the absence of more definitive guidance on suitable emission factors we used the SWM-GHG Calculator developed by IFEU Heidelberg to derive an estimated emissions factor of 1.125 tCO2e per tonne of disposed general waste, based on our estimate of the composition of our general waste.

Trends Due to the high degree of uncertainty in the current estimation approach, as well as the approach to extrapolate trends to historical years in line with organisational, there is not a significant trend to be interpreted from our historical waste emission estimates. This emission source is tracked and represented in the overview of emissions for transparency and orientation, and we will strive to improve on this in order to better analyse trends in the future.

Measures to reduce emissions

Separating waste

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.

Within the office spaces, we provide colleagues with the means to reduce and separate waste, by providing separated waste bins.

Reusable containers

We provide reusable containers for employees to transport their food from restaurants to our office during lunch breaks, to avoid the use of single-use food packaging.

Equipment lifetimes

We consciously select to purchase high quality and durable equipment that will meet our requirements for as long as possible into the future.

Wherever possible, we repair rather than dispose of faulty equipment. Where possible we ask the manufacturer of equipment to repair according to high standards, although this is sometimes more expensive than the remaining value of the equipment.

Wherever possible, we look to identify new owners for equipment that can no longer be used by the organisation, rather than to simply dispose of it, even when it is not necessarily economically viable for us to invest time in that process.

When disposal is not avoidable, we sent electronic equipment (e.g. phones and laptops) at own costs to a responsible IT recycling provider where electronic scrap is dismantled, sorted by fractions and sent for recycling.

Business travel (scope 3.6)

GHG emissions footprint

The vast majority of NewClimate Institute's GHG emissions derive from business travel, in particular air travel. Business travel-related emissions accounted for approximately 60% of our GHG footprint in 2022 due to the resumption of travel activities following the COVID-19 pandemic. Business travel accounted for 78% of our accumulated GHG emission footprint between 2014 and 2019, before travel restrictions during the pandemic reduced this to around 20% of our emissions in 2020 and 2021.

Between 2014 and 2022, on average, 91% of our accumulated business travel emissions derive from air travel, 3% from ground-based travel modes and an estimated 6% from hotel services.

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.

Activity tracking

Our emissions from air travel, rail, long distance bus and car are tracked through the travel expense report forms of all staff and non-staff travel when this is paid for by the organisation. The required travel details are entered directly by staff

and reviewed by our accounting staff. 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.

Ground based travel emissions have only been tracked in this way since 2020. 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.

For hotel services, we started in 2021 to collect specific details on the number of nights stayed in hotels in specific countries. For the period before 2021, we have estimated these inputs assuming that each business trip over that period resulted in a hotel stay of on average three nights.

Emission factors

Flight 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).

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 apply transport emission factors from the German Federal Environment Agency (Umweltbundesamt, 2020). For 2022, we apply the factors from 2021 which is the most recent data: 46 gCO_2/pkm was applied for rail travel, 37 gCO_2/pkm for long-distance buses, and 227 gCO_2/vkm for taxi and car (sharing) use. The 2020 and 2021 emissions factors for rail are unusually high compared with the trend in previous years; we expect this emission factor to reduce in the coming years and continue to prioritise rail as our preferred travel mode.

Hotel specific emission factors are not available. We derive indicative estimates using the suggested emission factors of the *2020 UK Government GHG Conversion Factors for Company Reporting*. This database provides suggested emission factors per night for hotel stays in specific countries. For example, the database suggests an emissions factor of 18.6 $kgCO_2e$ per night for a hotel in Germany, which accounts for approximately half of our hotel stays.

Trends

Figure 4 presents trends from 2015 to 2022 for business travel emissions. 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 and 2021. 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 future years as the restrictions ease. However, the restrictions have also led to new working arrangements with some international partners, which we hope to harness to

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

reduce the need for travel in the future, compared to the years before the pandemic.

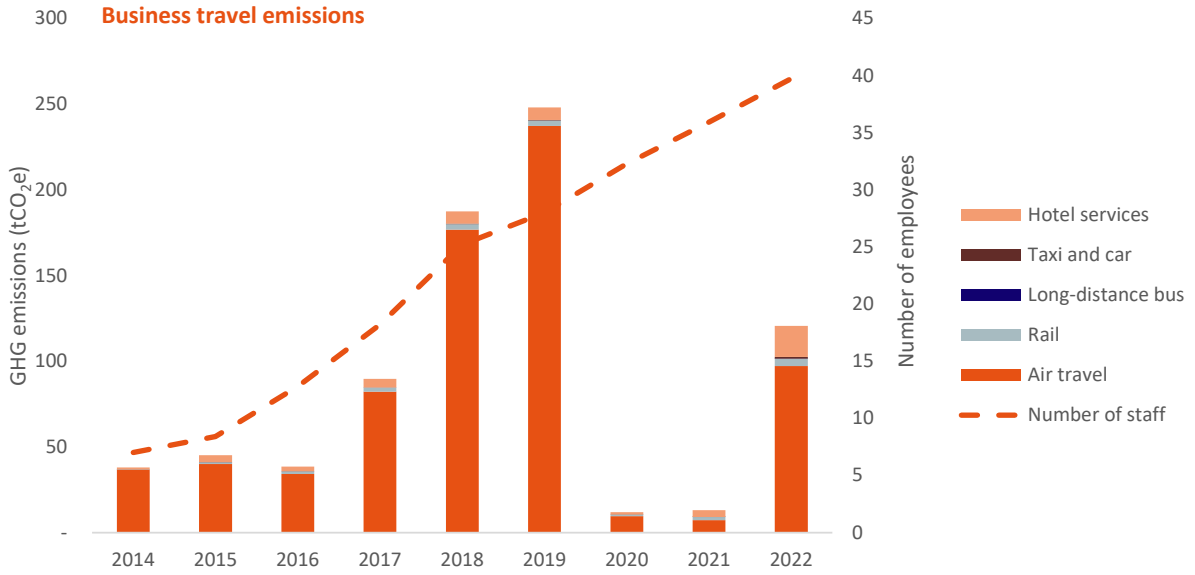


Figure 4: Business travel emissions

Measures to reduce emissions

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 since March 2020 continued to have an effect on travel in 2021 although the heaviest restrictions were slowly lifted. While the travel restrictions have 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 continued 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. 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.

Avoiding travel

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.

Prioritise rail

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.

New solutions

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 Institute 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.

See also measures to reduce emissions from employee commuting in the next section.

Employee commuting (scope 3.7)

GHG emissions footprint

We estimate – with a considerable degree of uncertainty – that emissions from employee commuting may account for about 1% of NewClimate Institute's emissions between 2014 and 2022. We estimate emissions from employee travel including private vehicle use and public transportation.

Activity tracking

Activity has been estimated for the period 2014 to 2021. We broadly estimated based on discussions with colleagues that approximately 75% of staff commuting journeys are taken with public transport and approximately 25% by bicycle or on foot. To produce more accurate estimates, we conducted an employee survey at the end of 2022. We found that just under 50% commuting by public transportation and just under 50% commuting by bicycle or foot. A little less than 1% of commutes was by means of private cars or electric scooters. We believe that this is likely to be as of a result of the programme that we introduced to provide bicycles to staff for use in daily commuting (see below).

Emission factors

We applied 2021 transport emission factors from the German Federal Environment Agency for the calculation of our travel emissions in 2022 (Umweltbundesamt, 2023). 80 gCO_2/pkm was applied for inner city public transport.

Trends

Due to the degree of uncertainty in the current estimation approach, as well as the approach to extrapolate trends to historical years in line with organisational, there is not a significant trend to be interpreted from our employee commuting emission estimates. This emission source is tracked and represented in the overview of emissions for transparency and orientation, and we will strive to improve on this in order to better analyse trends in the future.

Measures to reduce emissions

Facilitating public transport

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.

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.

Facilitating bicycle use

In 2022 we initiated a programme to provide high quality company bicycles for our long-serving staff to use when commuting to the office. The provision of bicycles includes their regular servicing and repair.

Since 2021, we provide bike storage in the garage in both of our offices in Berlin and Cologne, to further facilitate daily commuting by bicycle. In addition, both offices have been chosen and equipped to provide a shower facility for those in need after a long bike ride.

Step 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 real-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$e by 2020, rising to US$50–100/tCO$_2$e by 2030 and continuing an upward trajectory thereafter, provided that a supportive policy environment is in place (Carbon Pricing Leadership Coalition, 2017). The International Monetary Fund recommends a global average carbon price of at least US75/tCO$_2$e by 2030 (Parry, Black and Roaf, 2021). And a poll of 30 climate economists by the news agency Reuters, prior to COP26 in Glasgow in late 2021, found that these experts recommended carbon prices of USD 50-250/tCO$_2$e to fully decarbonise our economies by mid-century, with over half (median value) suggesting a level at, or above, USD 100/tCO$_2$e (Bhat, 2021).

Informed by these analyses and allowing for their uncertainties, **NewClimate Institute has imposed a price level of EUR 100/tCO$_2$e for emissions between 2014 and 2022 and will increase this to a level of EUR 120/tCO$_2$e for emissions in 2023.** The increase from EUR 100 to EUR 120 reflects our commitment to raise the level over time, especially given the continued global deficit of a supporting policy environment to meet the goals of the Paris Agreement. We will continue to regularly review this and to increase the price level in line with the latest scientific literature in the future.

Step 4: Supporting initiatives for climate change action

Climate responsibility step 4: With the proceeds of our internal pricing of emissions, 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	2022	2023
Donation sum	EUR 67,500	EUR 13,000	EUR 14,200	EUR 30,880
Emissions covered**	675 tCO_2e, including: • First estimate of all quantified emission sources for 2014-2019 period. • Travel-based emissions from 2020.	130 tCO_2e, including: • Updated estimate of all quantified emission sources for 2020, excl. travel-based emissions already covered in 2020 (46 tCO_2e). • Balance to cover an update to the estimated emissions for 2014-2019 period (+75 tCO_2e). • Travel-based emissions from 2021 (9 tCO_2e).	142 tCO_2e, including: • Emissions from 2021, excl. travel-based emissions already covered in the 2021 donation (36 tCO_2e). • Balance to cover an update to the estimated emissions for 2014-2020 period (+44 tCO_2e). • Travel-based emissions from 2022 (62 tCO_2e).	76 tCO_2e priced at EUR 100/tCO_2e, including: • Emissions from 2022, excl. travel-based emissions already covered in the 2022 donation (101 tCO_2e). • Balance to cover an update to the estimated emissions for 2014-2021 period (-25 tCO_2e). 194 tCO_2e priced at EUR 120/tCO_2e, including: • Travel-based emissions from 2023 (194 tCO_2e).
Donation project recipient	Renewable power and heat for Bayanbulag school in Mongolia. (Project cancelled*)	E-bike Taxis in Jinja, Uganda. (Project implemented)	Renewable power and heat for a nursery school in Mongolia. (Project implemented)	The donation sum is currently held by atmosfair to be pooled with the 2024 donation. The project to be supported is not confirmed.

* The donation that was originally allocated for this project was be reallocated in full to a new project at a nursery school in Mongolia (see 2022).

Renewable heat for a nursery school in Ulaanbaatar, Mongolia (2022)

In 2022, NewClimate Institute made a donation of EUR 14,200.00 – in addition to the reallocation of our EUR 67,500.00 donation to a different cancelled project in 2020 – to support a pilot project for solar-powered “air-to-air” heat pumps at a nursery school in Ulaanbaatar, Mongolia. The heating system was installed in August 2023 by the contractor kraftBoxx GmbH, who will also be responsible for the operation and technical monitoring of the project over 10 years. The heating system will be owned by the Kindergarten 200 and all proceeds from energy savings will accrue to them.

kraftBoxx will provide an annual operational report over the course of the pilot project with data on the electricity and heat production of the system based on smart meter readings. In the first two years, data on the temperature of all heated rooms in the building will also be digitally measured and reported to facilitate monitoring and evaluation of project outcomes.

The challenge of heating in Ulaanbaatar

Mongolia experiences extremely harsh winters where temperatures can drop to the range of - 15°C to - 30°C in the winter months. Heating systems (both individual and district-level) in the country are predominantly based on domestically produced coal, which is associated with high local pollution levels and public health issues. In addition, most buildings and heating systems are energy inefficient.

The project system – solar-powered two-stage heat pumps

Solar-powered heat pumps can replace coal-based heating systems in Mongolia, given the country's abundant solar resources and possibility to integrate into existing district or centralised heating infrastructure. They also work as a decentralised heating solution, which has great potential application in Mongolia's informal settlements ("Gers") where much of the pollution from heating is currently concentrated.

Kindergarten 200 was previously functioning on centralised heat supply from the nearby coal-fired power plant for its two buildings. This was replaced by a 20 kWp elevated solar PV system and 15 3kW two-stage split air-to-air heat pumps. A smart meter system for at least hourly online real-time monitoring was also installed.

This pilot project represents great potential to provide proof of technical and economic feasibility of using solar-powered heat pumps at kindergartens and schools in harsh subarctic conditions, in addition to illustrating the environmental and social benefits of such systems.

In addition, the project requires a review of the current thermal energy efficiency of the building and for the creation of a roadmap to improve it through simple but effective measures, such as sealing windows and thermal insulation.

Emission reduction potential

The emission reductions of the project, as well as the abatement cost, after the first year of its operation, based on real data.

Any emission reduction that is calculated from this project should be counted towards the emission inventories of Ulaanbaatar and Mongolia. None of the project implementing partners – including NewClimate Institute, atmosfair, kraftBoxx 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.

E-bike taxis in Jinja, Uganda (2021)

In 2021, NewClimate Institute made a donation of EUR 13,000.00 to support a pilot project for e-bike taxis in Jinja, Uganda. The European Institute for Sustainable Travel (EURIST e.V) in partnership with First African Bicycle Information Organisation (FABIO) delivered a total of 12 e-bikes to Jinja, Uganda (in two shipments February and August 2022) as part of a pilot project that will last 7 years.

Predominately the e-bikes are planned to be used as Taxis in this project, but e-bikes may also be a potential solution for other mobility solutions in similar contexts, such as for the provision of ambulance services, medicine deliveries, or to transport water. During the pilot phase GPS data, income generated by the taxi drivers and reduction in CO_2 emissions is being recorded to ascertain how successful the project is, to consider the potential for scaling up the project in other regions of Africa.

The challenge of mobility in Jinja

A lack of infrastructure for safe transportation remains a challenge in Jinja. Walking is the common mode of transport to provide access to schools, markets and hospitals. People use these footpaths to transport water, and agricultural products between the farm, home and markets, carrying these heavy goods on their backs and heads. As a result, boda-boda motorcycles, are established in rural and urban areas as a form of mobility service. They cost more than twice that of a minibus (run infrequently) and contribute heavily to CO_2 emissions and local air pollution.

The project system – e-bike taxis with solar e-hub

E-bikes can be utilised as taxis where the passengers are transported on the luggage carrier seat of the e-bike. Replacing the traditional fossil fuel boda-bodas in Uganda with sustainable transport, results in reduction of CO_2 emissions, in addition to noise and air pollution.

The e-bikes use a 460 Wh lithium battery with a range of 50km. The batteries in the e-bikes are charged at an e-hub, which also acts as a service station for the e-bikes. During the day the hub is powered by solar power and at night by mainly hydropower.

FABIO is responsible for the distribution and service of the e-bikes and have also set up training courses for mechanics and beneficiaries. The e-bikes are leased at a reduced cost or purchased in instalments by the taxi drivers. EURIST provides a product warranty of at least 7 years for the e-bikes, and they receive additional support from BODAWERK on battery recycling and solar technology. BODAWERK is a Ugandan social enterprise that develop the innovative solutions in the area of lithium-ion batteries. A message is sent from the built-in GPS tracker communicating when the battery is faulty or no longer functional. The equipped GPS also provides important information on how it is used, this information will help facilitate future enhancements.

The e-bikes have been adapted to the rural roads of Uganda as the terrain makes is difficult for traditional bikes to travel. To accommodate this, the e-bike has reinforced frames, thicker spokes, fatter tyres and a sturdy luggage rack. Besides the motor, all parts can be repaired with local spare parts.

Emission reduction potential

During this pilot stage the precise emission reduction potential of each e-bike is unknown, but it is estimated that each bike will lead to an annual emission reduction of 1 tCO_2e, at a marginal abatement cost of approximately EUR 120/tCO_2e by replacing the consumption of fossil fuels required for the boda-bodas. One of the main objectives of the pilot is to carry out a survey to better understand the impacts both in terms of climate and otherwise and evaluate whether there is the potential to scale this up in more regions across Africa. We had planned to communicate the findings of this pilot in this 2023 Climate Responsibility report, but we do not yet have sufficient information about the implementation of

the project. Accordingly, we plan to communicate the findings in the Climate Responsibility Report 2023 as well as detail the future trajectory of this project.

The comparably high marginal abatement cost of the project, coupled with the uncertainty of how suitable and sustainable a project of this kind would be in the Ugandan context, demonstrates the barriers for such exploration. However, the project has the potential for high replication, in both urban and rural Uganda supporting a modal shift, thereby reducing the reliance of fossil fuel imports.

Any emission reduction that is calculated from this project should be counted towards the emission inventories of Jinja and Uganda. None of the project implementing partners – including NewClimate Institute, atmosfair, FABIO, EURIST 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 Uganda, the project – and other replicating projects that follow the same support model – could support Uganda 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.

Renewable power and heat for Bayanbulag school in Mongolia (2020)

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, using an an innovative solar co-generation system combined with a low-maintenance wind turbine. The project represented a high-hanging fruit with great potential to unlock a hard-to-abate emission source; the innovative technology could overcome traditional barriers for renewable heating in harsh subarctic conditions.

Unfortunately, the project was cancelled due to issues faced by the project implementers during the COVID-19 pandemic. The technology providers faced challenges with supply chains for essential components, and were also not able to follow through with their plans to establish a permanent physical presence in East Asia. The latter fundamentally affected the long-term viability of this demonstration project, since the regional presence of the technology provider was essential to provide any necessary maintenance and repair services to the installation, as well as to train local technicians to provide those services. The technology provider plans to focus for now on further demonstrating its technology within Europe.

The donation that was originally allocated for this project was reallocated in full to a project at another nursery school in Mongolia in 2022 (presented above).

Step 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 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 due to the temporary ceasing of project-related travel during the COVID-19 pandemic, we applied this measure only as of 2021.
- We aim to communicate GHG emissions that can be attributed to specific projects, and their associated costs, to clients, and 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 and 2021, we were not able to apply this measure immediately, but started to do so when project-related travel slowly resumed in the course of 2022. Several funders and clients already reacted constructively and were willing to officially accept these costs. Important discussions on the necessity of certain travel activities where triggered. We aim to increase the share of funders with whom we have this conversation in line with the assumed increase in travel activity.
- 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 just started to gain significant feedback or experiences from colleagues and funders, with regards to the implementation of these measures in 2022 and 2023. In future iterations of the annual Climate Responsibility implementation report, we will continue to report on our experiences in the attempted implementation of these measures, along with the identification of new measures for enhanced mainstreaming in accounting processes.

Step 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 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 a growing number of organisations have taken the Climate Responsibility approach as a blueprint for their own strategies. We solicit feedback on our own Climate Responsibility approach to continuously improve and ensure its relevance.

NewClimate Institute 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 2022 period.

Table 3: Checklist for documentation of Climate Responsibility implementation

Component	Documentation for 2022
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 emission data for emission sources

Scope	Emissions source	Indicator	Unit	2014	2015	2016	2017	2018	2019	2020	2021	2022
Scope 1 emissions				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Scope 1	Stationary / mobile combustion & fugitive	GHG emissions	tCO2e	*Emission source is not relevant for the organisation. No direct combustion or fugitive emissions.*								
Scope 2 emissions				**1.1**	**4.6**	**7.0**	**9.6**	**13.2**	**15.5**	**14.0**	**14.0**	**16.0**
	Electricity (location based)	GHG emissions	tCO2e	0.7	2.0	3.0	3.9	5.3	7.9	8.2	7.1	8.4
	Building heating and cooling	GHG emissions	tCO2e	0.4	2.6	4.0	5.7	7.9	7.6	5.9	6.9	7.6
Scope 3 emissions (upstream)				**39.5**	**56.2**	**56.9**	**106.1**	**200.9**	**266.4**	**27.7**	**27.1**	**147.1**
Scope 3.1	Purchased goods and services	GHG emissions	tCO2e	1.0	9.8	16.4	13.6	9.6	14.0	12.5	10.3	22.4
Scope 3.2	Capital goods			*Emission source is not relevant for the organisation. No capital goods.*								
Scope 3.3	Upstream fuel and energy	GHG emissions	tCO2e	0.1	0.3	0.4	0.5	0.7	1.2	1.4	1.1	1.2
Scope 3.4	Upstream transportation			*Emission source is not relevant for the organisation. No direct contracting of upstream transportation services. Transport-related emissions of purchased goods and services are included in scope 3.1 calculations.*								
Scope 3.5	Waste	GHG emissions	tCO2e	0.2	0.3	0.4	0.6	0.8	0.8	0.9	0.9	0.9
Scope 3.6	Business travel – Air travel	GHG emissions	tCO2e	36.7	39.9	34.2	82.2	176.8	237.3	9.5	7.3	97.2
	Business travel – Ground travel	GHG emissions	tCO2e	0.2	1.2	1.7	2.6	3.5	3.5	1.0	1.9	5.2
	Business travel – Hotels	GHG emissions	tCO2e	1.2	4.0	2.7	4.9	7.2	7.3	1.4	4.0	18.2
Scope 3.7	Employee commuting	GHG emissions	tCO2e	0.1	0.8	1.1	1.7	2.3	2.2	0.9	1.6	1.9
Scope 3.8	Upstream leased assets	GHG emissions	tCO2e	*Emission source is not relevant for the organisation. No leased assets.*								
Scope 3 emissions (downstream)				**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**
Scope 3.9	Downstream transport	GHG emissions	tCO2e	*Downstream emission sources are not relevant for the organisation. The organisation has no downstream emissions associated with the services provided, nor any downstream leased assets.*								
Scope 3.10	Processing of sold products	GHG emissions	tCO2e									
Scope 3.11	Use of sold products	GHG emissions	tCO2e									
Scope 3.12	End-of-life treatment of products	GHG emissions	tCO2e									
Scope 3.13	Downstream leased assets	GHG emissions	tCO2e									
Scope 3.14	Franchises	GHG emissions	tCO2e	*Emission source is not relevant for the organisation. The organisation has no franchises.*								
Scope 3.15	Investments	GHG emissions	tCO2e	*Emission source is not relevant for the organisation. The organisation has no investments.*								
Total		GHG emissions	tCO2e	**40.6**	**60.8**	**63.8**	**115.7**	**214.1**	**281.9**	**41.7**	**41.1**	**163.1**

Table 5. Detail of activity data for relevant emission sources

Scope	Emissions source	Indicator	Unit	2014	2015	2016	2017	2018	2019	2020	2021	2022
Scope 2 emissions												
	Electricity - Cologne	Consumption	kWh	359	2,587	3,942	5,605	7,761	12,715	11,032	6,786	7,509
	Electricity - Berlin	Consumption	kWh	931	1,117	1,703	2,421	3,352	6,510	11,170	10,647	11,783
	Building heating and cooling - Cologne	Consumption	kWh	733	5,281	8,047	11,442	15,843	17,603	10,321	14,749	16,322
	Building heating and cooling - Berlin	Consumption	kWh	1,071	7,710	11,749	16,706	23,131	20,181	18,278	19,299	21,356
Scope 3 emissions (upstream)												
Scope 3.1	Notebook computers	# of units purchased	#	3	11	7	13	11	6	14	8	15
	Mobile phones	# of units purchased	#	0	0	0	4	7	10	10	12	5
	Other electronic equipment	Expenditure	EUR	396	4,280	12,519	4,243	2,721	7,389	3,542	3,076	12,846
	Office furnishing and equipment	Expenditure	EUR	-	10,208	6,263	13,712	4,823	9,251	10,441	526	4,857
	Office supplies	Expenditure	EUR	-	132	696	141	365	978	1,413	5,531	7,502
	IT Services	Expenditure	EUR	245	4,551	11,897	9,139	10,660	11,830	9,264	7,262	11,901
Scope 3.3	Upstream fuel and energy	Consumption	kWh	1,290	3,704	5,645	8,026	11,113	19,225	22,202	17,433	19,292
Scope 3.5	Waste	Mass	tonnes	0.2	0.2	0.3	0.5	0.7	0.7	0.8	0.8	0.8
Scope 3.6	Business travel – Air travel	Number of journeys	#	18	51	52	46	61	73	4	4	33
	Business travel – Rail[1]	Distance travelled	km	-	-	-	-	-	-	20,154	38,519	91,175
	Business travel – Long distance bus[1]	Distance travelled	km	-	-	-	-	-	-	-	15	862
	Business travel – Private car[1]	Distance travelled	km	-	-	-	-	-	-	38	446	4,350
	Business travel – Hotels	Hotel nights	#	60	196	148	160	192	212	72	127	457
Scope 3.7	Employee commuting – Public transport	Distance travelled	km	1,925	13,530	18,975	29,370	39,600	40,590	11,468	19,661	23,737

[1] We only started to collect detailed activity indicators for rail, long distance bus and private car (taxis) in recent years. Emissions for previous years for these emission sources were estimated through different means (See Step 1, Business Travel p14).

Data sources: See activity data sections of *Step 1: Track, and Step 2: Reduce GHG emissions p2*

Table 6. Detail of emission intensity data for emission sources

Scope	Emissions source	Indicator	Unit	2014	2015	2016	2017	2018	2019	2020	2021	2022
Scope 2 emissions												
	Electricity - Cologne	Emissions intensity	gCO_2e / kWh	557	527	523	485	473	411	369	410	434
	Electricity - Berlin	Emissions intensity	gCO_2e / kWh	557	527	523	485	473	411	369	410	434
	Building heating and cooling - Cologne	Emissions intensity	gCO_2e / kWh	180	180	180	180	180	180	180	180	180
	Building heating and cooling - Berlin	Emissions intensity	gCO_2e / kWh	219	219	219	219	219	219	219	219	219
Scope 3 emissions (upstream)												
Scope 3.1	Purchased goods and services			Emission factors obtained for electronic equipment from manufacturers where available or estimated.								
Scope 3.3	Upstream fuel and energy	Emissions intensity	gCO_2e / kWh	82	73	72	68	65	63	63	65	64
Scope 3.5	Waste	Emissions intensity	gCO_2e / kg	1125	1125	1125	1125	1125	1125	1125	1125	1125
Scope 3.6	Business travel – Air travel			Emission intensity variable depending on flight. Calculated using the atmosfair calculator								
	Business travel – Rail	Emissions intensity	gCO_2e / pkm	32	32	32	32	32	29	50	46	46
	Business travel – Long distance bus	Emissions intensity	gCO_2e / pkm	29	29	29	29	29	29	27	37	37
	Business travel – Private car	Emissions intensity	gCO_2e / pkm	214.5	214.5	214.5	214.5	214.5	231	228	226.8	226.8
	Business travel – Hotels			Emission intensity variable per country								
Scope 3.7	Employee commuting – Public transport	Emissions intensity	gCO_2e / pkm	58	58	58	58	58	55	75	80	80

Data sources: See full details in the emission factors sections of *Step 1: Track, and Step 2: Reduce GHG emissions´*(p2)

References

Atmosfair (2016) *Atmosfair Flight Emissions Calculator*. Berlin, Germany: Atmosfair gGmbH. Available at: https://www.atmosfair.de/wp-content/uploads/atmosfair-flight-emissions-calculator-englisch-1.pdf (Accessed: 27 January 2023).

Bhat, P. (2021) 'Carbon needs to cost at least $100/tonne now to reach net zero by 2050: Reuters poll', *Reuters*, 25 October. Available at: https://www.reuters.com/business/cop/carbon-needs-cost-least-100tonne-now-reach-net-zero-by-2050-2021-10-25/ (Accessed: 30 May 2023).

Bundesamts für Justiz (2022) *Gebäudeenergiegesetz vom 8. August 2020 (BGBl. I S. 1728), das durch Artikel 18a des Gesetzes vom 20. Juli 2022 (BGBl. I S. 1237) geändert worden ist*. Germany. Available at: https://www.gesetze-im-internet.de/geg/GEG.pdf.

Carbon Pricing Leadership Coalition (2017) *Report of the High-Level Commission on Carbon Prices*. Washington, D. C.: Carbon Pricing Leadership Coalition. Available at: https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59244eed17bffc0ac256cf16/1495551740633/CarbonPricing_Final_May29.pdf (Accessed: 27 January 2023).

IEA (2019) *Heating and Cooling Strategies in the Clean Energy Transition*. Available at: https://www.iea.org/reports/heating-and-cooling-strategies-in-the-clean-energy-transition.

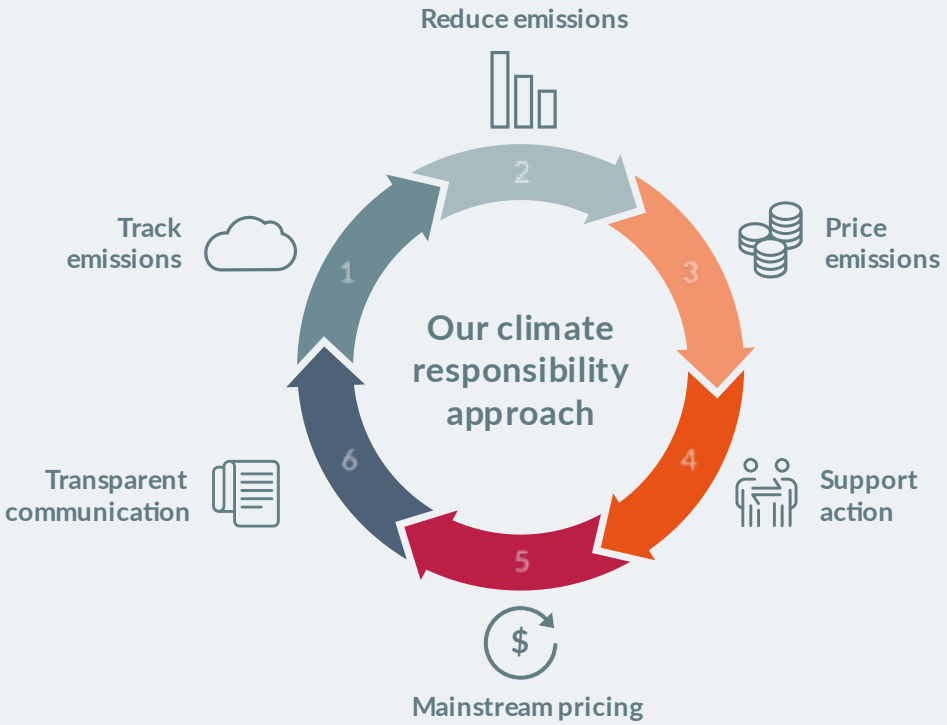
International Energy Agency (2018) *CO2 emissions from fuel combustion 2018 (Highlights)*, *International Energy Agency*. Available at: https://doi.org/10.1670/96-03N.

Parry, I., Black, S. and Roaf, J. (2021) *Proposal for an International Carbon Price Floor Among Large Emitters*. Washington D.C: International Monetary Fund. Available at: https://www.imf.org/en/Publications/staff-climate-notes/Issues/2021/06/15/Proposal-for-an-International-Carbon-Price-Floor-Among-Large-Emitters-460468 (Accessed: 19 December 2022).

Umweltbundesamt (2020) 'Vergleich der durchschnittlichen Emissionen einzelner Verkehrsmittel'. TREMOD. Available at: https://www.umweltbundesamt.de/sites/default/files/medien/366/bilder/dateien/vergleich_der_durchschnittlichen_emissionen_einzelner_verkehrsmittel_im_personenverkehr_bezugsjahr_2018_tabelle_0.pdf .

Umweltbundesamt (2023) *CO_2-Emissionen pro Kilowattstunde Strom stiegen in 2022*. Available at: https://www.umweltbundesamt.de/themen/co2-emissionen-pro-kilowattstunde-strom-stiegen-in (Accessed: 21 December 2023).

WRI GHG Protocol (no date) *The GHG Emissions Calculation Tool*. Available at: https://ghgprotocol.org/ghg-emissions-calculation-tool.



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