NEW CLIMATE INSTITU

# CLIMATE RESPONSIBILITY 2024

**Communication of measures to address our climate footprint**

FEBRUARY 2025

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## Communication of measures to address our climate footprint

February 2025

**See more information about the climate responsibility approach and download the report:**

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NEW CLIMATE INSTITUTE

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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.

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.**

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


### Step 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.

### Step 2: Reduce emissions

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

### Step 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.

### Step 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.

### Step 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.

### Step 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.

# STEP 1: TRACK, STEP 2: REDUCE – OUR PATH TO LOWER EMISSIONS

**Climate responsibility step 1:** We maintain an overview of our greenhouse gas (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 subsections 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 from 2014 to 2023 are included in → **Annex**.

**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 the best available knowledge on emission reduction opportunities. 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 substantial emission reductions in the near future are not possible, we transparently communicate the challenges we face to encourage a dialogue on finding solutions.

# 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 2023. Average annual emissions from these emission sources in this period amount to an estimated 130 $tCO_2e$, although with significant differences between the years due to the growth of the organisation and the impacts of the COVID-19 pandemic. During this period, emissions amounted to an estimated 1,297 $tCO_2e$. Emissions in 2023, at 259.25 $tCO_2e$, were 10% lower than pre-pandemic levels but grew 38% from 2022, due to the continued resumption of business travel combined with growth in number of employees. Despite total emissions in 2023 almost reaching pre-pandemic levels, our emissions per employee were 43% lower in 2023 than before the COVID-19 pandemic in 2019.

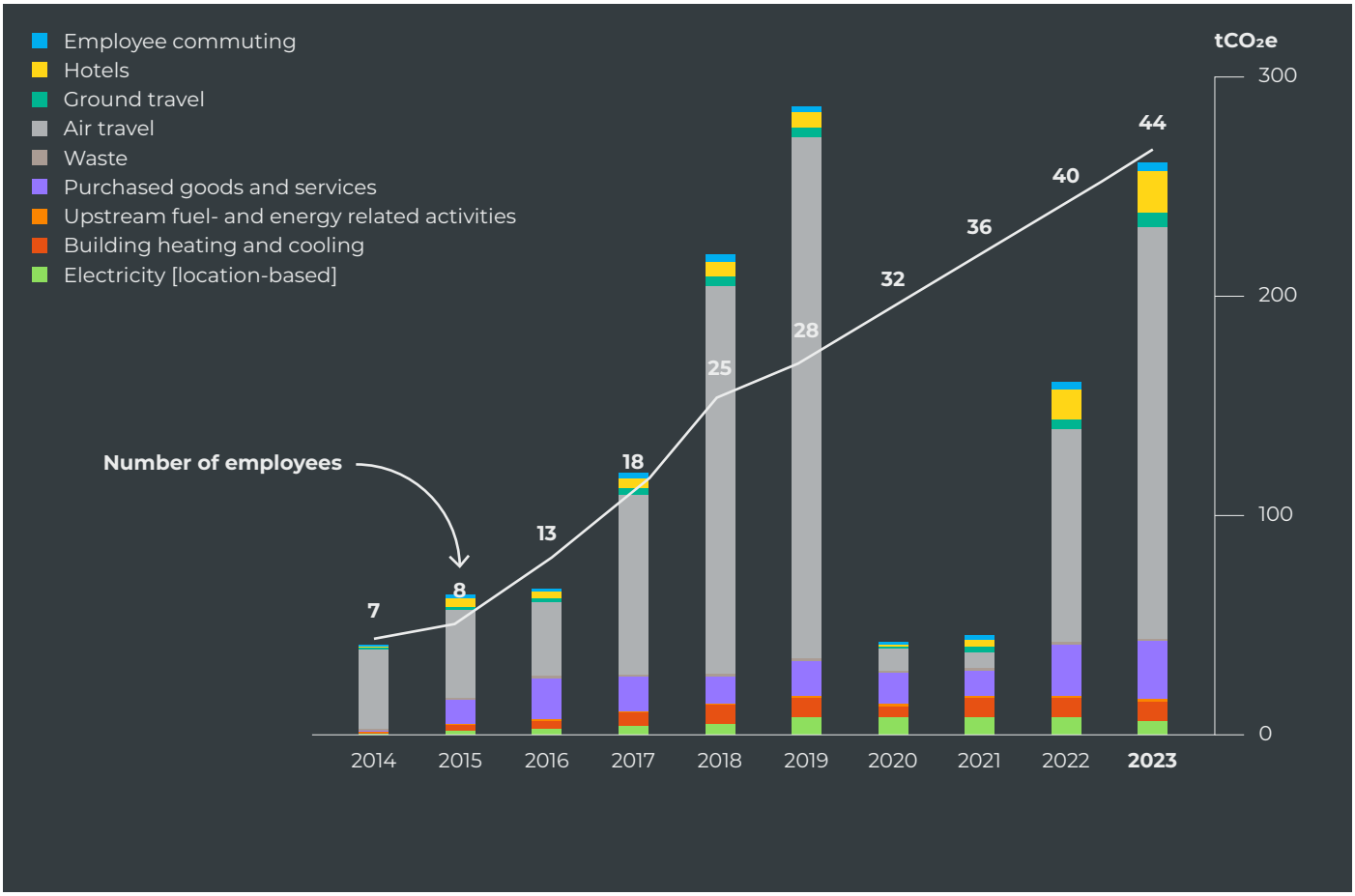
The majority (82%) of NewClimate Institute's GHG emissions in 2023 came from business travel. 88% of these emissions derived from air travel, 3% from ground-based travel modes and an estimated 9% from hotel services. Our travel activity is a function of the projects that we work on and the countries 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 projects. 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 12% and 9% of the organisation's average annual GHG emission footprint from 2014 to 2023 respectively. Emissions from purchased goods and services derive 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 both in the order of 0.5% of our total emissions, 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.

**Fig. 1**
**Overview of GHG emission footprint [2014-2023]**



**Tab. 1**
**Overview of GHG emission footprint [2014-2023]**

| Scope | Emissions source | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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** | **4.8** | **7.3** | **10.1** | **13.9** | **16.4** | **12.9** | **16.8** | **16.8** | **14.9** |
| **Scope 2** | Emissions from purchased energy – Electricity [location based] | 0.7 | 1.9 | 2.9 | 3.9 | 5.2 | 8.0 | 8.1 | 8.0 | 8.2 | 6.5 |
| | Emissions from purchased energy – Building heating | 0.4 | 2.9 | 4.4 | 6.3 | 8.7 | 8.4 | 4.8 | 8.5 | 8.6 | 8.4 |
| **Scope 3 emissions [upstream]** | | **39.8** | **58.4** | **58.8** | **108.5** | **203.5** | **268.5** | **29.1** | **28.2** | **143.3** | **244.3** |
| **Scope 3.1** | Purchased goods & services | 1.3 | 12.0 | 18.4 | 16.0 | 12.3 | 16.3 | 11.8 | 11.8 | 23.1 | 26.7 |
| **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 scope 1 or scope 2] | 0.1 | 0.3 | 0.4 | 0.5 | 0.7 | 1.1 | 1.2 | 1.0 | 1.2 | 1.3 |
| **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 | 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 | 187.1 |
| | Business travel – Ground travel | 0.2 | 1.2 | 1.7 | 2.6 | 3.5 | 3.5 | 1.0 | 1.9 | 3.9 | 6.9 |
| | Business travel – Hotels | 1.2 | 4.0 | 2.7 | 4.9 | 7.2 | 7.3 | 1.4 | 3.6 | 14.1 | 18.6 |
| **Scope 3.7** | Employee commuting | 0.1 | 0.8 | 1.1 | 1.7 | 2.3 | 2.2 | 0.9 | 1.6 | 2.8 | 3.1 |
| **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** | | **40.9** | **63.2** | **66.2** | **118.6** | **217.4** | **285.0** | **42.0** | **44.7** | **160.0** | **259.3** |

# PURCHASED ENERGY [SCOPE 2 AND SCOPE 3.3]

**GHG emissions footprint**

Purchased energy was a significant source of GHG emissions in 2023, accounting for an estimated 17 $tCO_2e$, or 6%, 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 accounted for an estimated 37% of the organisation's GHG emissions footprint in 2021 (due to reduced travel emissions during that year). 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.

For spatial heating and cooling, the data we have obtained from building owners for 2020 to 2023 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 of spatial heating energy for 2022 and 2023 on the heating consumption in 2021. We will update our 2020 to 2023 activity data once this information is made available to us. 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. We are in exchange with our landlord in Berlin to solve these data gaps.

In Cologne, heating and cooling is delivered 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. We have received data on the energy consumption of the centralised building heating system only for 2021 and have used this data to make preliminary estimates for 2022 and 2023. With our energy-efficient behaviour, we have kept our cooling and heating demand very low, beyond what the centralised ventilation system provided. In 2022, extra cooling (0 kWh) and heating (57 kWh) – in addition to the centralised building heating and cooling system – 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 centralised system. However, this is not visible to us, since energy consumption is assigned to the different tenants based on square metre floor space and not based on actual consumption.

Due to the growth rate of the organisation in its initial years, NewClimate Institute has had various office locations. For several of these locations, 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 period between 2015 and 2017, 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 2023, we applied emissions factors of 388 $gCO_2e$/kWh to electricity consumption in both offices, 215 $gCO_2e$/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. In the absence of better information on the emissions factor of district heating from the city of Cologne up until 2021, we used a default value of 180 $gCO_2e$/kWh from the German Building Energy Law (Bundesamts für Justiz, 2022). The annual emissions factors for 2022 (229 $gCO_2e$/kWh) and 2023 (215 $gCO_2e$/kWh), were provided by the local energy provider RheinEnergie (RheinEnergie, no date). 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 2014-2023 period, based on the general emission factor of natural gas combustion (Umweltbundesamt, 2022) 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).

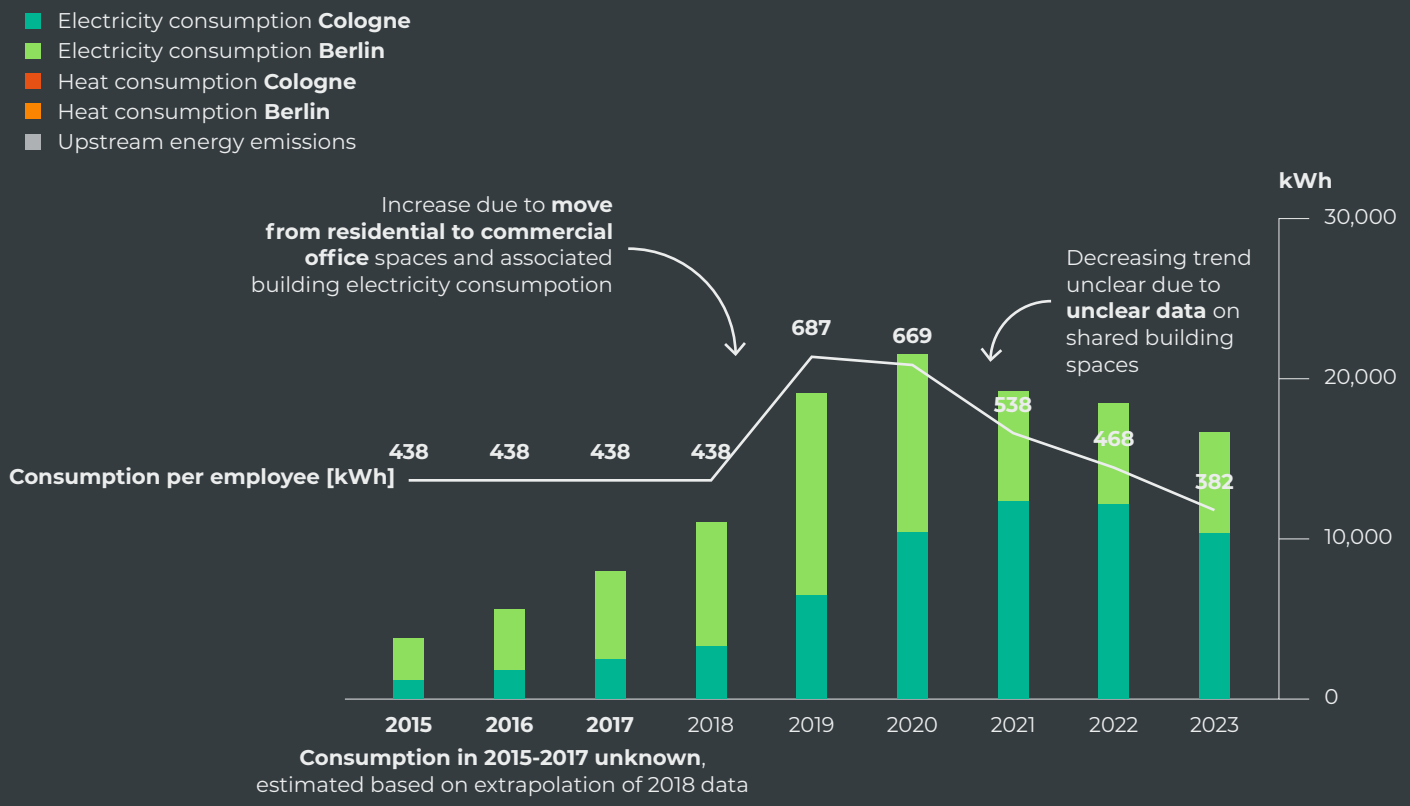
NewClimate Institute has carefully selected ElektrizitätsWerk Schönau (EWS) as its electricity supplier. EWS invests in its own renewable energy projects. We consider this to have a positive impact on the expansion of renewable electricity in Germany (see measures to reduce emissions below for further details). Nevertheless, we recognise that this does not result in zero emissions regarding our own electricity consumption. For a conservative and objective calculation of emissions associated with our office energy use in 2023, we apply the location-based accounting method, using the 2023 grid emission factor of 388 $gCO_2e/kWh$, estimated by the German Environment Agency (Umweltbundesamt, 2024b).

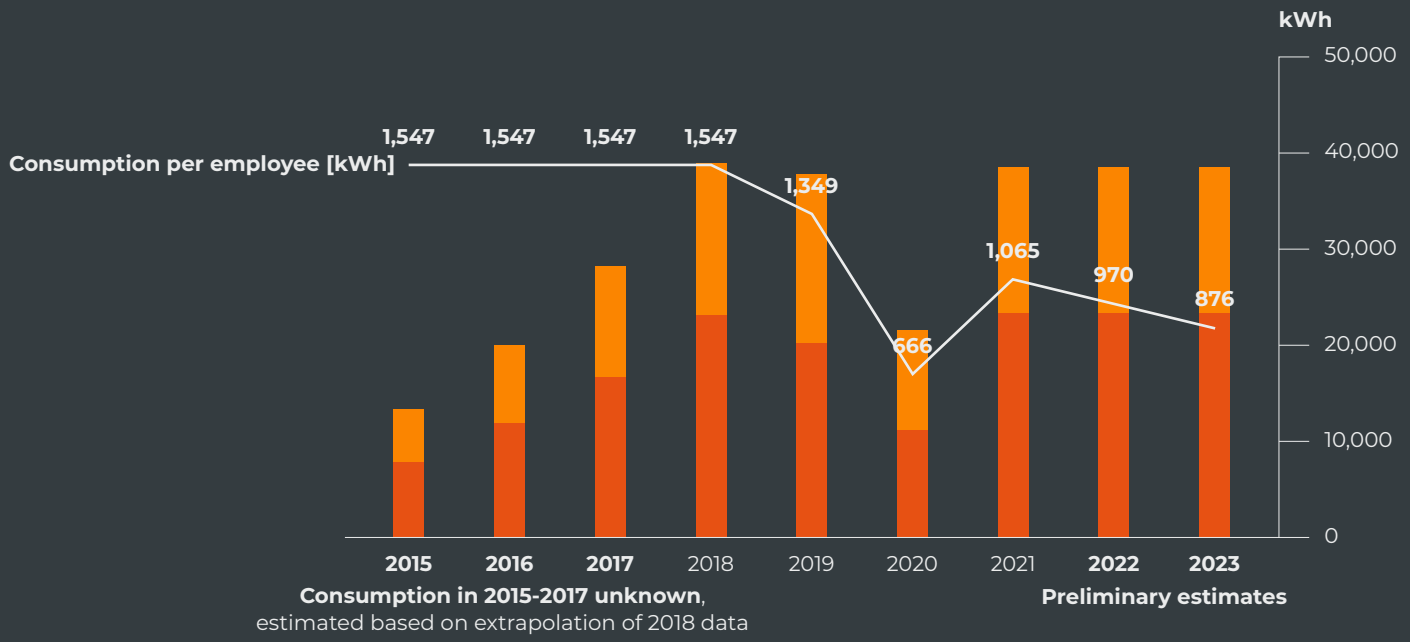
For upstream electricity emissions (scope 3.3) including fugitive emissions and those associated with transmission and distribution losses, we apply an emissions factor of 57 $gCO_2e/kWh$, estimated by the German Environment Agency (Umweltbundesamt, 2024b).

**Trends**

→ **Figure 2** presents trends from 2015 to 2023 for electricity consumption, heat consumption, and GHG emissions. T**his 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 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 2023, as the organisation grew from 7 to 44 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.



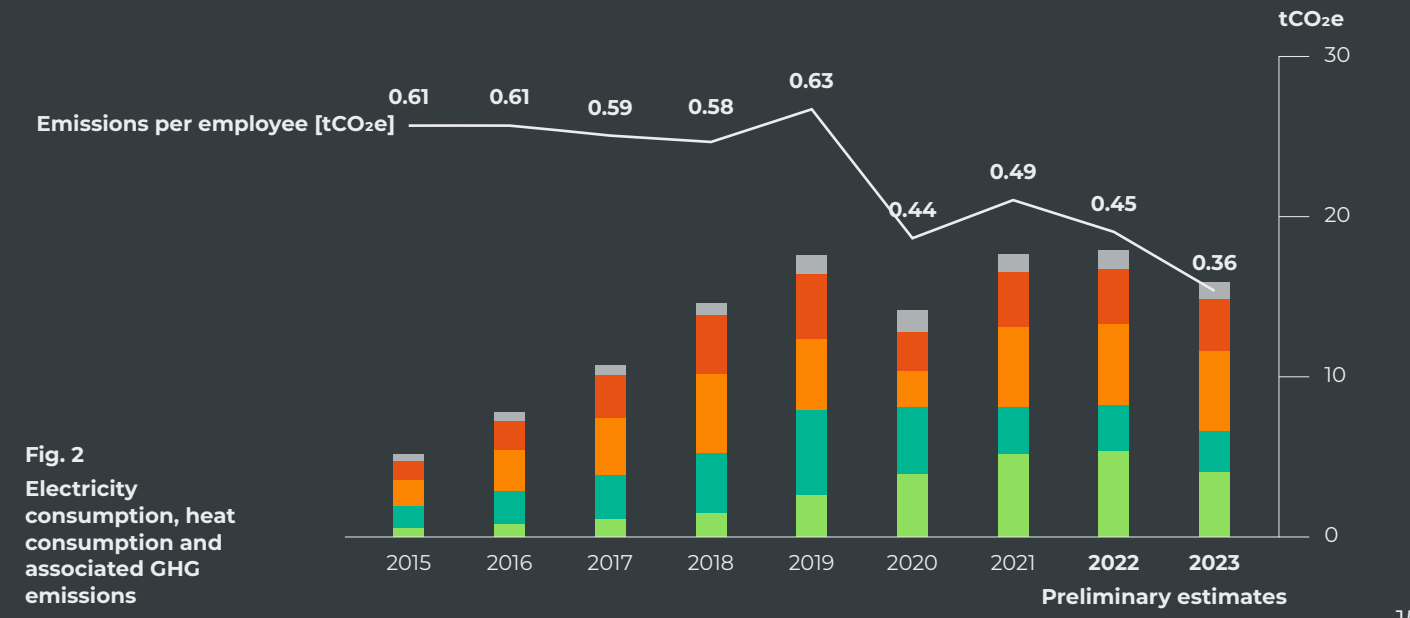




**Fig. 2**
**Electricity consumption, heat consumption and associated GHG emissions**

## Measures to reduce emissions

**Use of efficient buildings**

For office relocations in Berlin in 2019 and Cologne in 2021, we invested a significant amount of time to find spaces that meet 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 regarding 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 organisations 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. Subsequently, we were informed by the landlord in 2023 that they intend to pursue the installation of rooftop solar photovoltaic themselves, which we had been encouraging them to do as we consider this the more economically sustainable model.

**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 is 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 “Guarantees of Origin” (Herkunftsnachweise) in the EU, to compensate for the energy that they source from a range of fossil-fuel powered plants. More ambitious suppliers use revenues to invest directly 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 fulfils 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 two thirds. We have deactivated rather than replaced 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 set to cold by default.

In Cologne, we moved into our new office space in February 2021. Since then, we have 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 the decentralised air conditioning system were switched off. These measures have 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 individual behavior to ensure efficient use of the office. In early 2023, we replaced all remaining energy saving lamps by 50% more efficient LEDs.

For procurement of new or replacement of old 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 metres to detect the unexpected 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 regarding the energy efficiency of our office space. The energy consumption of staff in their working spaces at home were 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 again defined 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 accounted for an estimated 12% of NewClimate Institute's accumulated emission footprint between 2014 and 2023. In 2023, it amounted to an estimated 26.69 $tCO_2e$. Under this category, we estimate the emissions arising from the procurement of laptops, mobile phones, other electronic equipment, office furnishings, office supplies and equipment, IT services, food and beverage consumption and company bicycles. The latter two categories were added in 2023. NewClimate began providing bicycles for employees to reduce emissions from commuting, and as such company bicycles are included in NewClimate's emissions. Emissions from food and beverages, although small, were added for completeness as NewClimate's employees have access to fruit, coffee, tea, and plant-based and dairy milk in the office.

**Activity tracking**

We track the procurement of electronic devices, furniture, office supplies, external IT services, food and beverages, and bicycles 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 or number of the procured materials; and, 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 through 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 their sources and pursue measures to reduce them.

**Emission factors**

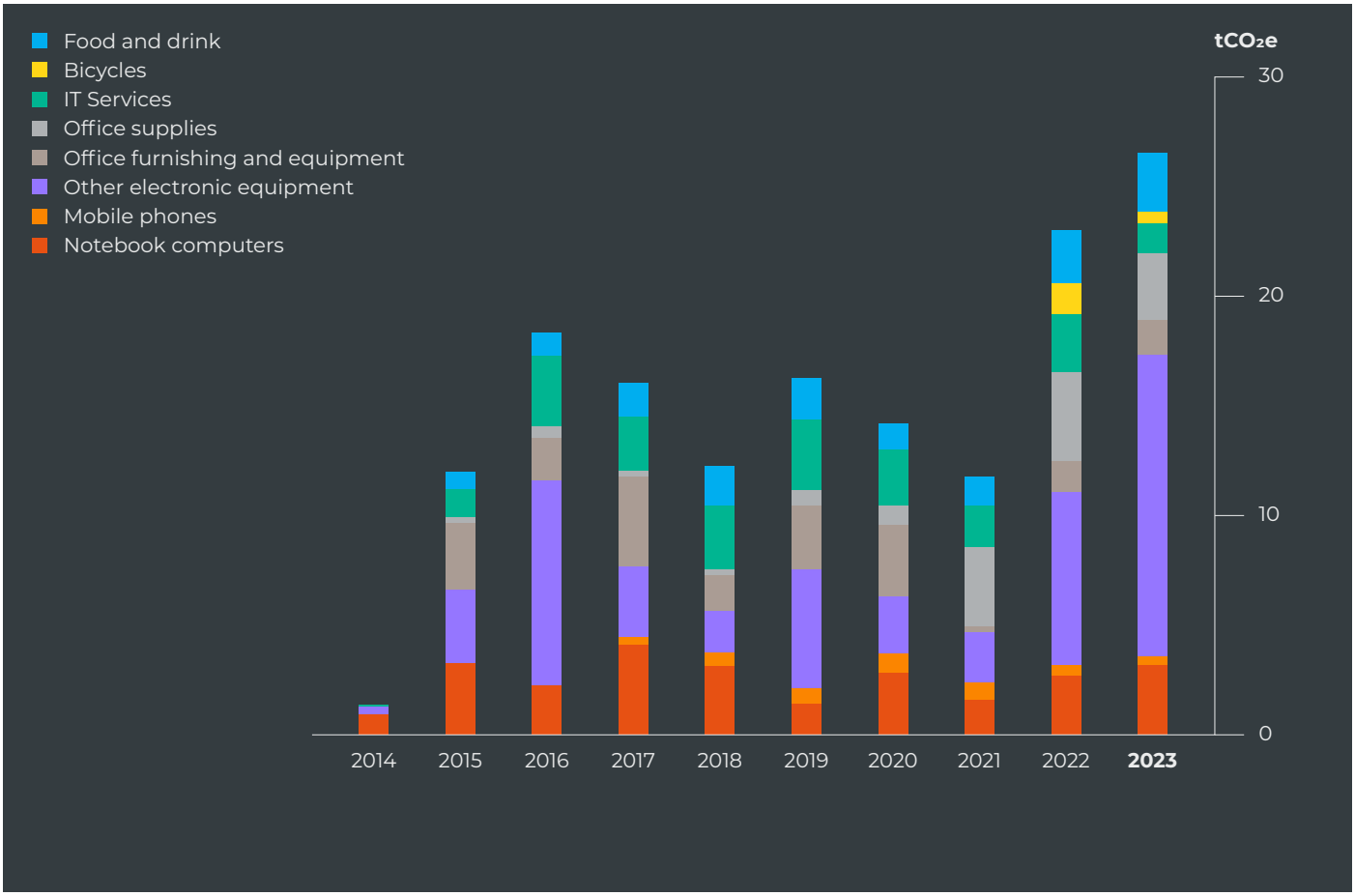
The approach for calculation depends on the information that could be obtained about the procured materials and services. In the case that the supplier provides an estimate of life-cycle emissions, we take this value directly. This is the case, for example, for the procurement of much of our electronic equipment, including computers and mobile telephones. Where we procure refurbished equipment, we apply a discount rate to the emissions factor (0.75 for laptops and 0.5 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, the estimated emissions can vary significantly. For food and beverage emission factors, we used lifecycle assessment studies from Poore and Nemecek's study on food emissions (Poore and Nemecek, 2018).

**Trends**

→ **Figure 3** presents trends from 2015 to 2023 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. 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 see a considerable uptick in emissions from purchased goods and services in 2022, a trend that continues in 2023. 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 continue into 2024 as we expand our working spaces.

**Fig. 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 2023 were refurbished models.

**Conscious procurement**

We aim to purchase laptops from manufacturers that publish GHG lifecycle assessments for the specific models to ensure that we can be steered by this information in our selection.

Coffee, tea, and fruit, 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. We are moving away from consuming dairy milk in both offices, replacing it with oat milk.

**Reduce material use**

We avoid printing wherever possible. All paper products procured by NewClimate Institute are 100% based on recycled paper (including 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 account for about 0.5% of NewClimate Institute's emissions between 2014 and 2023. 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 has not changed 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 will be revised again in the future when better information is available. Despite these uncertainties, we 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 for our offices. However, we make the 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 8,320 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 to landfill untreated. 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 (Institut für Energie- und Umweltforschung) Heidelberg to derive an estimated emission factor of 1.125 $tCO_2e$ 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 growth, there is no significant trend to be observed 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 to better analyse trends in the future.

## Measures to reduce emissions

**Separating waste**

There are several challenges that we face as an organisation in 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 in discussing and seeking solutions to this problem 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.

Wherever possible, we repair rather than dispose of faulty equipment. Where possible, we ask the manufacturer of the faulty 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 send electronic equipment (e.g., phones and laptops) to a responsible IT recycling provider at our own cost, where electronic scrap is dismantled, sorted by fractions, and sent to recycling.

# BUSINESS TRAVEL [SCOPE 3.6]

## GHG emissions footprint

The vast majority of NewClimate Institute's GHG emissions derives from business travel, in particular air travel. Emissions related to business travel accounted for 82% of our GHG footprint in 2023. Furthermore, business travel accounted for 83% of our cumulative 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 2023, on average, 91% of our accumulated business travel emissions derive from air travel, 3% from ground-based travel modes and an estimated 7% 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 projects.

**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, in case 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 were 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 period between 2014 and 2019, 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 to collect specific details on the number of nights spent in hotels in specific countries in 2021. For the period before 2021, we estimated these inputs assuming that each business trip over that period resulted in a hotel stay of an average of three nights.

**Emission factors**

Flight emissions are calculated using the methodology from Atmosfair. 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. This results in emission estimates approximately three times higher 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 2023, we apply the factors from 2022, which is the most recent data: 31 $gCO_2$/pkm was applied for rail travel, 31 $gCO_2$/pkm for long-distance buses, and 232 $gCO_2$/pkm for taxi and car use or sharing.

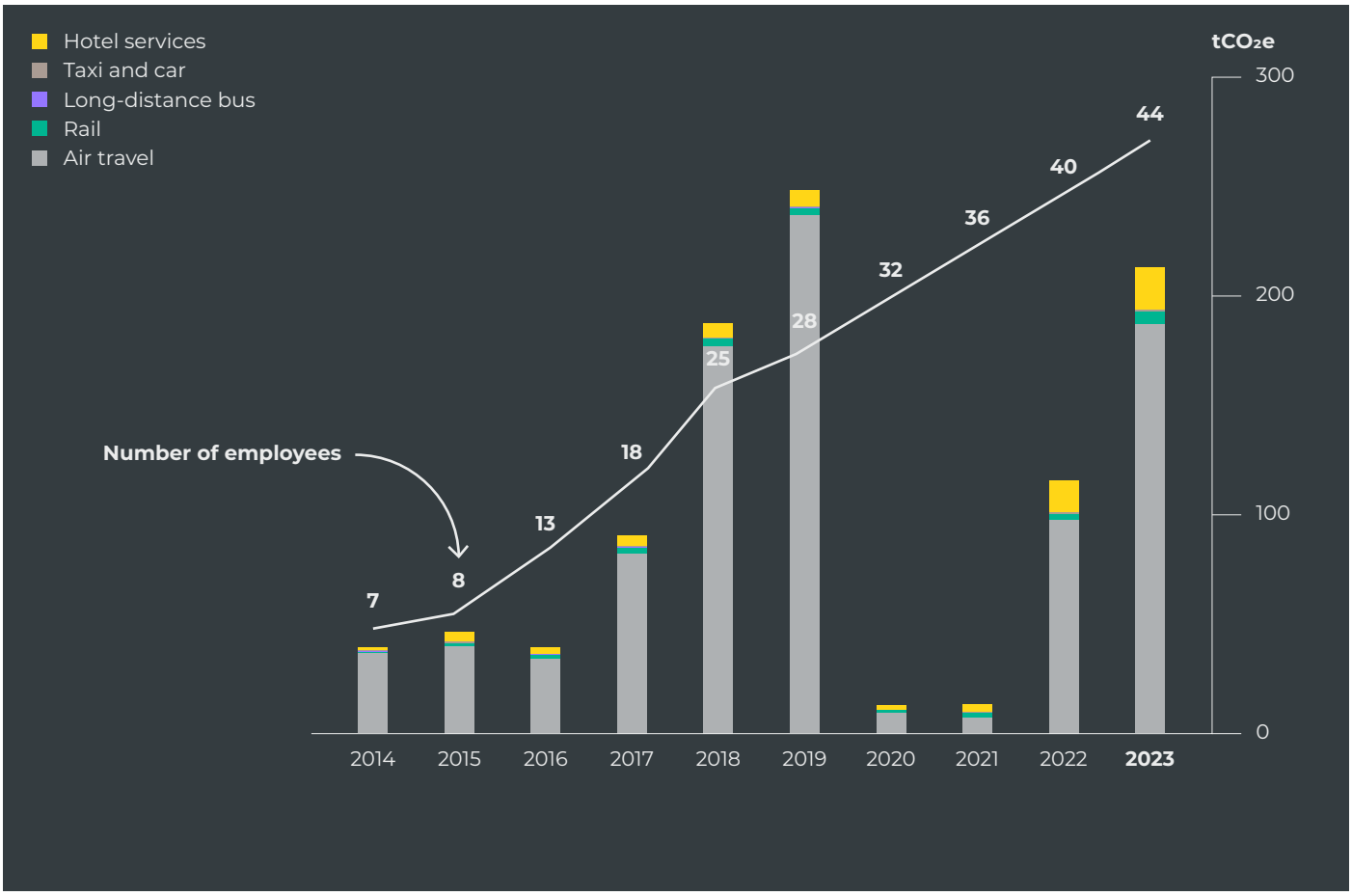
Hotel specific emission factors are not available. We derive indicative estimates using the suggested emission factors of the UK Government GHG Conversion Factors for Company Reporting, which is updated yearly. This database provides

suggested emission factors per night for hotel stays in specific countries. For example, the database suggests an emission factor of 13.2 kg$CO_2$e per night for a hotel in Germany in 2023, which accounts for approximately half of our hotel stays.

**Trends**

→ **Figure 4** presents trends from 2015 to 2023 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. Travel increased again in 2022 and 2023 as restrictions have eased. However, the restrictions have also led to new working arrangements with some international partners, and emissions from business travel emissions have not reached pre-pandemic levels despite NewClimate Institute continuing to grow.

**Fig. 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 government representatives of the countries we work with. Another significant driver is travel to important events and conferences. Since the intention of such travel is to support the countries and people we work with and to enhance their capability for climate change mitigation planning and ambition raising, we believe 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 reduced our travel to minimal levels in 2020 and 2021. While the travel restrictions 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 replace all the benefits of travel, and therefore, this remains our major source of emissions.

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 – without hindering 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, climate impact overrules cost efficiency.

| | |
|---|---|
| **Avoiding travel** | We invest in high-quality video conference 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 of international air travel if there are rail connections of less than a 6-hour duration available. 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, more climate-friendly and efficient alternative to air travel. We encourage such alternatives, even though they are usually associated with higher costs.

If flying is inevitable, we refrain from booking 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 comes from air travel. At this time, we cannot identify measures to completely mitigate these emissions in the short-term, despite a willingness to pay for alternative technology options if they existed. This issue could 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 generally communicated by applying the climate responsibility approach. Further, we continue with various workstreams on policies and investment criteria for Paris alignment in the transport sector, and notably an 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 accounted for about 1% of NewClimate Institute's emissions between 2014 and 2023. We estimate emissions from employee travel, including private vehicle use and public transportation.

**Activity tracking**

Activity has been estimated for the period from 2014 to 2021. We estimated – based on discussions with colleagues – that approximately 75% of commutes are taken by 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% commute by public transportation and just under 50% commute 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 a result of the programme we introduced to provide bicycles to staff for daily commuting (see below). A survey is also being conducted in 2024 and 2025 to understand how this trend has developed and to refine our emissions accounting.

**Emission factors**

We applied 2022 transport emission factors from the German Federal Environment Agency for the calculation of our travel emissions in 2023 (Umweltbundesamt, 2024a). The factor 63 $gCO_2$/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 growth, there is no significant trend to be observed 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 increasing financial support for subscriptions to public transport tickets (“Jobtickets”) for employees, incentivising the use of public transport for daily commuting as well as other personal travel outside of work. Since 2023, when the Germany-wide public transportation ticket was introduced (“Deutschlandticket”), NewClimate Institute has provided this ticket to its employees at no additional costs. The positive impact of this decision is a growing use of public transport and general support for the Deutschlandticket.

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.

**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 have provided 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 equipped with a shower 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 the 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 our emissions to zero. In particular, alternative technologies do not yet exist commercially to significantly reduce emissions from air travel.

We consider the concept of "offsetting" emissions to have limitations against the objectives of the Paris Agreement. It is therefore 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 determined 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 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 USD 40-80/$tCO_2e$ by 2020, rising to USD 50-100/$tCO_2e$ 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 USD 75/$tCO_2e$ by 2030 (Parry et al., 2021). 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/$tCO_2e$ to fully decarbonise our economies by mid-century, with over half (median value) suggesting a level at, or above, USD 100/$tCO_2e$ (Bhat, 2021).

Informed by these analyses and allowing for their uncertainties, **NewClimate Institute has imposed a price level of EUR 100/$tCO_2e$ for emissions between 2014 and 2022 and increased this to a level of EUR 120/$tCO_2e$ 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 want to “offset emissions” 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.

**Tab. 2**
**Overview of donations and relation to estimated emissions**

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| **Donation sum** | **EUR 67,500** | **EUR 13,000** | **EUR 14,200** | **EUR 30,880** | **EUR 26,400** |
| **Emissions covered** | **675 $tCO_2e$, including:**<br><br>First estimate of all quantified emission sources for 2014-2019 period.<br><br>Travel-based emissions from 2020. | **130 $tCO_2e$, including:**<br><br>Updated estimate of all quantified emission sources for 2020, excl. travel-based emissions already covered in 2020 [46 $tCO_2e$].<br><br>Balance to cover an update to the estimated emissions for 2014-2019 period [+75 $tCO_2e$].<br><br>Travel-based emissions from 2021 [9 $tCO_2e$]. | **142 $tCO_2e$, including:**<br><br>Emissions from 2021, excl. travel-based emissions already covered in the 2021 donation [36 $tCO_2e$].<br><br>Balance to cover an update to the estimated emissions for 2014-2020 period [+44 $tCO_2e$].<br><br>Travel-based emissions from 2022 [62 $tCO_2e$]. | **76 $tCO_2e$ priced at EUR 100/$tCO_2e$, including:**<br><br>Emissions from 2022, excl. travel-based emissions already covered in the 2022 donation [101 $tCO_2e$].<br><br>Balance to cover an update to the estimated emissions for 2014-2021 period [-25 $tCO_2e$].<br><br>**194 $tCO_2e$ priced at EUR 120/$tCO_2e$, including:**<br><br>Travel-based emissions from 2023 [194 $tCO_2e$]. | **220 $tCO_2e$ priced at EUR 120/$tCO_2e$, including:**<br><br>Emissions from 2023, excl. travel-based emissions already covered in the 2023 donation [46 $tCO_2e$].<br><br>Balance to cover an update to the estimated emissions for 2014-2022 period [+15 $tCO_2e$].<br><br>Travel-based emissions from 2024 [159 $tCO_2e$]. |
| **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 for 2023 and 2024 is currently held by atmosfair to be pooled with the 2025 donation. The project to be supported has not been confirmed yet. | |

* 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 donated EUR 14,200 – in addition to the reallocation of our EUR 67,500 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 Kindergarten 200, a kindergarten in Ulaanbaatar, 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 has been 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-assisted heat pumps can significantly reduce the dependence on coal-based heating systems in Mongolia, given the country’s abundant solar and wind potential and possibility to integrate such technologies 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. The switch to electricity-powered heating systems carries significant potential for the decarbonisation of both the electricity and heating sector in Mongolia, since heating is often supplied by coal-fired Combined Heat and Power (CHP) plants and the continued reliance on, and operation of CHP plants creates an economic barrier for the integration of renewables into the electricity grid. Up until recently, there have not been affordable or reliable technologies to decouple heating from fossil fuel combustion in the most extreme winter conditions.

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 70 kWp solar system, with a 50 kWp electric coil and Phase Change Material (PCM) heat storage for Kindergarten A, and 20 kWp 19 AC/air-to-air heat pumps for Kindergarten B. A smart meter system for at least hourly online real-time monitoring was also installed.

This pilot project was a great opportunity 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

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 neutralisation 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 in raising the ambition of its climate change mitigation targets in the future. By identifying and implementing solutions in areas that are out of reach for the national government, additional mitigation potential can be unlocked and be reflected in national climate targets.

We plan to keep monitoring the performance of the system via the remote monitoring platform and especially evaluate the impact of the energy savings measures mentioned above. We are also trying to push for feed-in-tariff of the Photovoltaic (PV) system ideally at a rate of 0.11 USD/kWh, which would allow for a scale up of PV2Heat in Mongolia with purely (low/zero interest) debt financing.

## Results from the implementation of the project [2024 update]

The solar-electric heating systems for the nursery school were fully commissioned in January 2024, and the 70 kWp solar system works as expected, covering some of the electricity demand for heating and exporting temporal excess electricity to the Mongolian national grid. The heating systems were able to completely cover heating demand of the buildings, which have not used coal heat since January 2024. The heating systems were therefore able to successfully perform at temperatures as low as -35°C during winter. Potential improvements in efficiency were identified and issues are being addressed. The performance of the system is monitored via a remote monitoring platform, so that energy efficiency can be observed and improved. Moreover, atmosfair is trying to push for a feed-in-tariff of the PV system, ideally at a rate of 0.11 USD/kWh, which would allow for a scale up of PV2Heat in Mongolia.

# E-BIKE TAXIS IN JINJA, UGANDA [2021]

In 2021, NewClimate Institute donated EUR 13,000 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 in February and August 2022) as part of a pilot project that will last 7 years. The project is still being funded by atmosfair and ongoing.

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 are being recorded to ascertain how successful the project is and 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 for 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 seven years for the e-bikes. They receive additional support from BODAWERK on battery recycling and solar technology. BODAWERK is

a Ugandan social enterprise that develops 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 to evaluate whether there is potential to scale this up in more regions across Africa. The project is ongoing and expanding, and atmosfair is planning to support and evaluate an updated e-bike model in a small second pilot to see if increased battery capacity, motor power, and a more robust frame and components (but also increased retail price) lead to a significant increase in daily km driven.

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 neutralisation 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 in raising the ambition of its climate change mitigation targets in the future. By identifying and implementing solutions in areas that are out of reach for the national government, additional mitigation potential can be unlocked and be reflected in national climate targets.

# RENEWABLE POWER AND HEAT FOR BAYANBULAG SCHOOL IN MONGOLIA [2020]

NewClimate Institute donated 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 innovative solar cogeneration 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 on further demonstrating its technology within Europe for now.

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 has included the costs of the emissions related to 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 implementation approach that is in line with tax regulations. However, due to the temporary ceasing of project-related travel during the COVID-19 pandemic, we have 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 funders, 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 have started to do so when project-related travel slowly resumed in the course of 2022. Several funders and clients have already reacted constructively and showed willingness 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 supposed 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 since 2022. In future iterations of the annual climate responsibility 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 2023 period.

**Tab. 3**
**Checklist for documentation of climate responsibility implementation**

| Component | Documentation for 2023 |
|---|---|
| Overview of the organisation's GHG emissions | → **"Step 1 and 2"** section |
| Scope of emissions accounting | → **"Step 1 and 2"** section |
| Methodological assumptions for emissions accounting | → **"Step 1 and 2"** section |
| Details of actions for reducing own emissions in 2023 | → **"Step 1 and 2"** section |
| Determination of price signal aligned with the Paris Agreement objectives | → **"Step 3"** section |
| Details on how the funds have been used to support climate change action | → **"Step 4"** section |
| Details of measures to be taken to improve mainstreaming of emissions pricing in accounting processes | → **"Step 5"** section |
| Report on challenges experienced in implementing each of the climate responsibility steps | Discussed in each section |

# ANNEX: GHG EMISSION FOOTPRINT CALCULATION

**Tab. 4**
**Detail of emission data for emission sources**

| Scope | Emissions source | Indicator | Unit | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scope 1 emissions** | | | | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **Scope 1** | Stationary or mobile combustion and fugitive emissions | GHG emissions | $tCO_2e$ | Emission source is not relevant for the organisation. No direct combustion or fugitive emissions. | | | | | | | | |
| **Scope 2 emissions** | | | | **4.8** | **7.3** | **10.1** | **13.9** | **16.4** | **12.9** | **16.6** | **16.8** | **14.9** |
| **Scope 2** | Electricity (location based) | GHG emissions | $tCO_2e$ | 1.9 | 2.9 | 3.9 | 5.2 | 8.0 | 8.1 | 8.0 | 8.2 | 6.5 |
| | Building heating and cooling | GHG emissions | $tCO_2e$ | 2.9 | 4.4 | 6.7 | 8.7 | 8.4 | 4.8 | 8.5 | 8.6 | 8.4 |
| **Scope 3 emissions [upstream]** | | | $tCO_2e$ | **58.4** | **58.8** | **108.5** | **203.5** | **268.5** | **29.1** | **28.2** | **143.3** | **244.3** |
| **Scope 3.1** | Purchased goods & services | GHG emissions | $tCO_2e$ | 12.0 | 18.4 | 16.0 | 12.3 | 16.3 | 14.2 | 11.8 | 23.1 | 26.7 |
| **Scope 3.2** | Capital goods | | $tCO_2e$ | Emission source is not relevant for the organisation. No capital goods. | | | | | | | | |
| **Scope 3.3** | Upstream fuel and energy | GHG emissions | $tCO_2e$ | 0.1 | 0.3 | 0.4 | 0.5 | 0.7 | 1.1 | 1.1 | 1.1 | 1.0 |
| **Scope 3.4** | Upstream transportation | GHG emissions | $tCO_2e$ | 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 | $tCO_2e$ | 0.3 | 0.4 | 0.6 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 |
| **Scope 3.6** | Business travel – Air travel | GHG emissions | $tCO_2e$ | 39.9 | 34.2 | 82.2 | 176.8 | 237.3 | 9.5 | 7.3 | 97.2 | 187.1 |
| | Business travel – Ground travel | GHG emissions | $tCO_2e$ | 1.2 | 1.7 | 2.6 | 3.5 | 3.5 | 1.0 | 1.9 | 3.9 | 6.9 |
| | Business travel – Hotels | GHG emissions | $tCO_2e$ | 4.0 | 2.7 | 4.9 | 7.2 | 7.3 | 1.4 | 3.6 | 14.1 | 18.6 |
| **Scope 3.7** | Employee commuting | GHG emissions | $tCO_2e$ | 0.8 | 1.1 | 1.7 | 2.3 | 2.2 | 0.9 | 1.6 | 2.8 | 3.1 |
| **Scope 3.8** | Upstream leased assets | GHG emissions | $tCO_2e$ | Emission source is not relevant for the organisation. No leased assets. | | | | | | | | |
| **Scope 3 emissions [downstream]** | | GHG emissions | $tCO_2e$ | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **Scope 3.9** | Downstream transport and distribution | GHG emissions | $tCO_2e$ | 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 | $tCO_2e$ | | | | | | | | | |
| **Scope 3.11** | Use of sold products | GHG emissions | $tCO_2e$ | | | | | | | | | |
| **Scope 3.12** | End-of-life treatment of sold products | GHG emissions | $tCO_2e$ | | | | | | | | | |
| **Scope 3.13** | Downstream leased assets | GHG emissions | $tCO_2e$ | | | | | | | | | |
| **Scope 3.14** | Franchises | GHG emissions | $tCO_2e$ | Emission source is not relevant for the organisation. The organisation has no franchises. | | | | | | | | |
| **Scope 3.15** | Investments | GHG emissions | $tCO_2e$ | Emission source is not relevant for the organisation. The organisation has no investments. | | | | | | | | |
| **Total** | | **GHG emissions** | **$tCO_2e$** | **63.2** | **66.2** | **118.6** | **217.4** | **285.0** | **42.0** | **44.7** | **160.0** | **259.3** |

**Tab. 5**
**Detail of activity data for relevant emission sources**

| Scope | Emissions source | Indicator | Unit | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scope 2 emissions** | | | | | | | | | | | | |
| | Electricity - Cologne | Consumption | kWh | 2,558 | 3,898 | 5,542 | 7,674 | 12,715 | 11,032 | 6,786 | 6,291 | 6,412 |
| | Electricity - Berlin | Consumption | kWh | 1,117 | 1,703 | 2,421 | 3,352 | 6,510 | 10,578 | 12,526 | 12,327 | 10,413 |
| | Building heating and cooling - Cologne | Consumption | kWh | 5,281 | 8,047 | 11,442 | 15,843 | 17,603 | 10,321 | 14,749 | 15,033 | 15,033 |
| | Building heating and cooling - Berlin | Consumption | kWh | 7,710 | 11,749 | 16,706 | 23,131 | 20,181 | 11,181 | 23,510 | 23,510 | 23,510 |
| **Scope 3 emissions [upstream]** | | | | | | | | | | | | |
| **Scope 3.1** | Notebook computers | # of units purchased | # | 11 | 7 | 13 | 11 | 6 | 14 | 8 | 16 | 16 |
| | Mobile phones | # of units purchased | # | 0 | 0 | 4 | 7 | 10 | 10 | 12 | 6 | 9 |
| | Other electronic equipment | Expenditure | EUR | 4,280 | 12,519 | 4,243 | 2,721 | 7,389 | 3,542 | 3,076 | 12,846 | 24,920 |
| | Office furnishing and equipment | Expenditure | EUR | 10,208 | 6,263 | 13,712 | 4,823 | 9,251 | 10,441 | 526 | 4,857 | 5,818 |
| | Office supplies | Expenditure | EUR | 132 | 696 | 141 | 365 | 978 | 1,413 | 5,531 | 7,502 | 5,731 |
| | IT Services | Expenditure | EUR | 4,551 | 11,897 | 9,139 | 10,660 | 11,830 | 9,264 | 7,262 | 11,901 | 6,250 |
| | Bicycles | # of units purchased | # | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 5 |
| | Food | Mass | Kg | 535 | 540 | 552 | 563 | 564 | 371 | 546 | 580 | 588 |
| | Drink | Volume | Litres | 76 | 107 | 165 | 222 | 228 | 129 | 138 | 314 | 354 |
| **Scope 3.3** | Upstream fuel and energy | Consumption | kWh | 3,675 | 5,601 | 7.963 | 11,026 | 19,225 | 21,610 | 19,312 | 18,619 | 16,825 |
| **Scope 3.5** | Waste | Mass | tonnes | 0.2 | 0.3 | 0.5 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 |
| **Scope 3.6** | Business travel – Air travel | Number of journeys | # | 51 | 52 | 46 | 61 | 73 | 4 | 4 | 33 | 55 |
| | Business travel – Rail* | Distance travelled | km | - | - | - | - | - | 20,154 | 38,519 | 91,175 | 188,757 |
| | Business travel – Long distance bus* | Distance travelled | km | - | - | - | - | - | - | 15 | 862 | 1,672 |
| | Business travel – Private car (taxis)* | Distance travelled | km | - | - | - | - | - | 38 | 446 | 4,350 | 4,112 |
| | Business travel – Hotels | Hotel nights | # | 196 | 148 | 160 | 192 | 212 | 72 | 127 | 457 | 614 |
| **Scope 3.7** | Employee commuting – Public transport | Distance travelled | km | 13,530 | 18,975 | 29,370 | 39,600 | 40,590 | 11,468 | 19,661 | 44,214 | 49,833 |

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

*
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).

**Tab. 6**

**Detail of emission intensity data for emission sources**

| Scope | Emissions source | Indicator | Unit | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scope 2 emissions** | | | | | | | | | | | | |
| | Electricity - Cologne | Emissions intensity | $gCO_2e$ / kWh | 527 | 523 | 485 | 473 | 411 | 369 | 410 | 434 | 388 |
| | Electricity - Berlin | Emissions intensity | $gCO_2e$ / kWh | 527 | 523 | 485 | 473 | 411 | 369 | 410 | 434 | 388 |
| | Building heating and cooling - Cologne | Emissions intensity | $gCO_2e$ / kWh | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 229 | 215 |
| | 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 | 73 | 72 | 68 | 65 | 57 | 56 | 57 | 59 | 57 |
| **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 | 29 | 50 | 46 | 31 | 31 |
| | Business travel – Long distance bus | Emissions intensity | $gCO_2e$ / pkm | 29 | 29 | 29 | 29 | 29 | 27 | 37 | 31 | 31 |
| | Business travel – Private car | Emissions intensity | $gCO_2e$ / pkm | 214.5 | 214.5 | 214.5 | 214.5 | 231 | 228 | 226.8 | 232.4 | 232.4 |
| | Business travel – Hotels | | | Emission intensity variable per country. | | | | | | | | |
| **Scope 3.7** | Employee commuting – Public transport | | | 58 | 58 | 58 | 58 | 55 | 75 | 80 | 63 | 63 |

**Data Sources:** See full details in the emission factors sections of Step 1: Track, and Step 2: Reduce GHG emissions.

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**NewClimate – Institute for Climate Policy and Global Sustainability gGmbH**

Cologne Office
Waidmarkt 11a
50676 Cologne, Germany

Berlin Office
Schönhauser Allee 10-11
10119 Berlin, Germany

Phone: +49 221 999 83 300
Email: info@newclimate.org
Website: www.newclimate.org

NEW CLIMATE INSTITUTE