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atmosfair



2022 Annual Report



Solar kiosk in Kenya for clean drinking water

Featured highlight:
Negative emissions
Biochar
DAC – Direct Air Capture



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Editorial

Dear Readers,

I recently returned from northern Nigeria where I spent several days visiting atmosfair's factory in Kano taking strict safety precautions. Currently, 70 employees produce more than 200 efficient cookstoves here every day. Soon, output will grow to 500 a day, followed by 3,000 in three years. The highlight of the trip was the grand opening of the factory which made it to the 8 pm news on Nigeria's first TV programme with many ministers and high-ranking guests. At the opening, the Nigerians applauded, interrupting my speech when I said that the design of the cookstoves is “made in Germany”, that they are made of stainless steel and have the best efficiency with a 10-year guarantee. Germany stands for quality, and that compels us all the more to deliver it.

By 2030, we aim to produce over 6 million cookstoves for the whole of Nigeria. The value is created entirely in Nigeria, the steel is imported from South Africa, as is increasingly the machinery for production. Together with the Nigerian Research and Development Department, we also plan to equip villages and small towns with pellet machines that turn agricultural waste into pellets for the cookstoves, which would increase the wood saved by the cookstoves from 80% to 100%. We want to stop deforestation in Africa's most populous country by 2030 and have signed an agreement with the Nigerian government to this end.

We are also talking to the country's climate minister about green and blue hydrogen for Nigeria. His delegation also came to Berlin, where atmosfair arranged meetings with the most important ministries and hydrogen technology providers.

Blue hydrogen is controversial among environmentalists. The process involves the conversion of Nigerian natural gas into hydrogen, with the CO₂ being captured and stored in the ground, e.g. in rock formations. This poses risks to the local environment, it is inefficient, and there is no guarantee that the CO₂ will be permanently sequestered there. But from the Nigerian perspective, there is no alternative, and they have made this clear in Germany: - Show us how to



transition from blue hydrogen to green hydrogen (produced with renewable electricity), because we have to recycle our natural gas. - This is where pragmatism and fundamental aspirations meet. atmosfair plans to form a high-ranking Nigerian-German working group that can hopefully come up with some alternatives to meet somewhere in the middle.

Negative emissions?
Scientists think that we can no longer do without negative emissions and carbon capture if we still want to achieve the Paris climate targets. That is why atmosfair has also become active in this area, read the featured highlight in this report starting on page 6.

And, something else: In 2022, we were once again test winners, this time with Stiftung Warentest's finance test. This means that we have won all 12 comparative tests since atmosfair was founded in 2005. And with nearly EUR 30 million, atmosfair was able to further increase its revenue also thanks to your help, thank you very much!

Time and again, we receive correspondence from people who want to get involved in the fight against climate change and lend a hand. Thank you for this support. Especially if you have North-South or technology experience, we look forward to hearing from you!

Best regards,

Sincerely

Dr Dietrich Brockhagen,
CEO atmosfair gGmbH



Efficient cookstoves

atmosfair subsidizes energy efficient stoves in Africa and Asia. The small stoves are very popular as users immediately notice how much wood and money they save.



Solar, wind and water

Solar, wind, and water are the three pillars of regenerative energy sources. atmosfair supports partners and technologies which further the development of local economies and the environment.



Biogas & Biomass

atmosfair partners build small biogas plants which transform cow and pig manure into gas used for cooking and valuable fertilizer. atmosfair also supports electricity production from crop residues and the composting of organic waste.



Environmental education

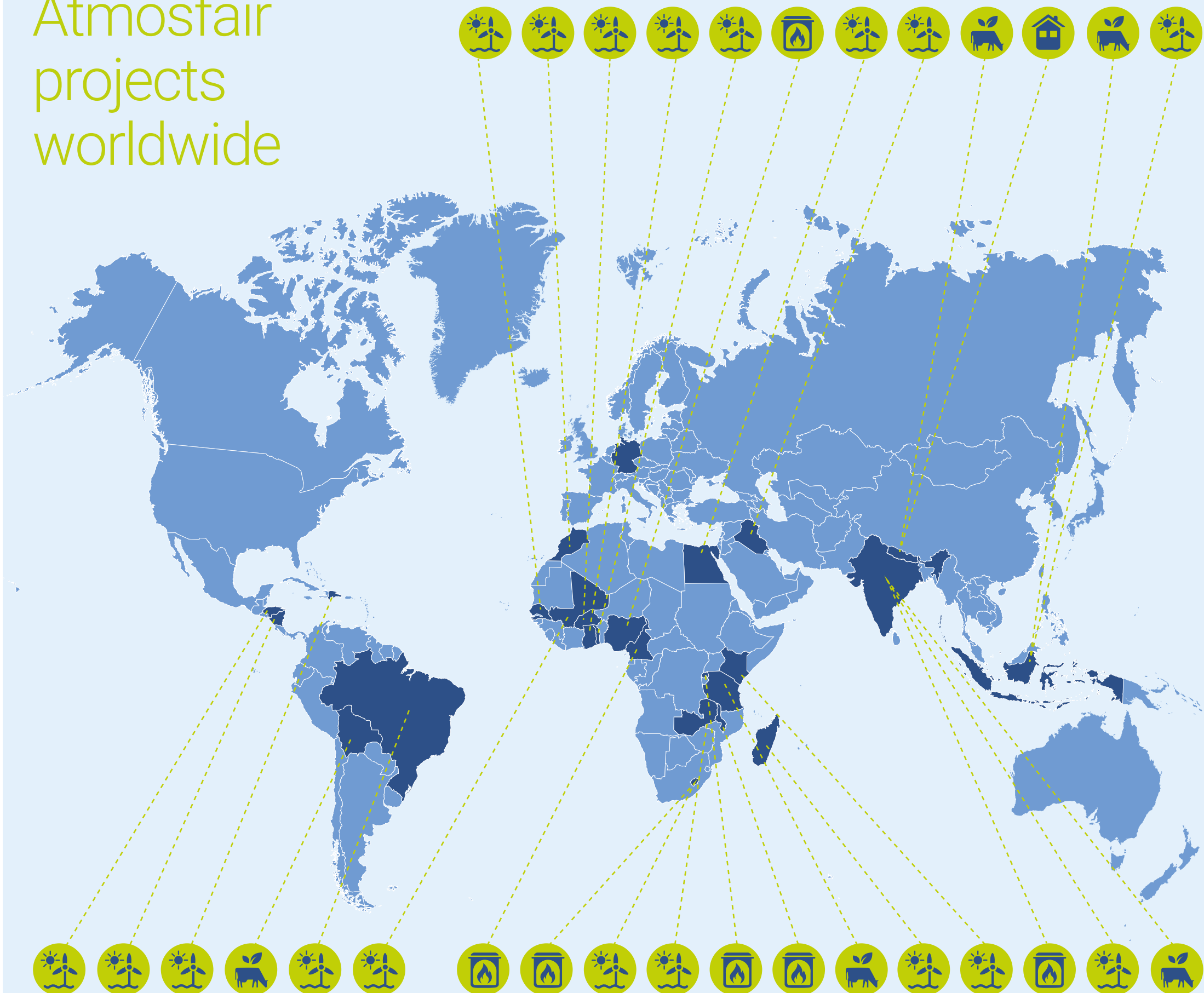
Climate protection starts at your doorstep. This is why atmosfair promotes educational projects in German schools as an investment for the future. We do not claim any resulting carbon reductions.



Renewable energies building

After the violent earthquake in Nepal in 2015, atmosfair supported the construction of energy selfsufficient lodges. This helps shift tourism, an important economic sector in the country, towards an environmentally friendly foundation.

Atmosfair projects worldwide





Negative emissions

Biochar is a natural substance that was used as far back as by the Incas to increase the fertility of the soil (black earth, Terra preta). Today, weeks of drought, torrential rains and depleted soil are causing problems for agriculture around the world. Biochar can help in two ways: more humus, earthworms, soil bacteria and long-term carbon storage to mitigate climate change. That is why atmosfair is testing biochar in India and Nepal, with several partners like the Assam Tea Estate, and with great success.

A worker plants a tree on the heavily eroded mountain near Bandipur

Biochar in India and Nepal

Somesh Dutta, former assistant manager at Jalinga Tea Estate and now an independent consultant for atmosfair, is pleased: "The tea crop this year has yielded much more than usual." He has worked for 20 years on the tea estate in the state of Assam in India and has extensive experience in organic fertilisers. The higher yield comes from the biochar that the tea estate staff had previously mixed into the top layer of soil. It is the beginning of autumn in Jalinga. Somesh knows that the biochar keeps the soil wet longer after the rain and retains the moisture. "That is

good for the tea and the soil." He is familiar with the region and was involved in the first year of the biochar trial in 2021. "It's a lot of work with biochar," he says, "but it's worth it, and we want to keep our land fertile for the long term."

atmosfair has been cooperating with the Tea Estate since 2020. We are testing here in practice what many experts see as an opportunity for climate change mitigation and agriculture at the same time: removing the greenhouse gas CO₂ from the atmosphere, storing it permanently and simultaneously improving soil quality and crop yields. Sounds like a win-win. But is it really that easy? How much work does it take and who does the work? And how much does it cost? This is

something we want to test over the span of several years in practice.

Biochar itself is not a nutrient, but has a special structure like activated carbon. Like a piece of paper that can be folded, torn and squeezed into a small ball, biochar offers a lot of porous surface area to bind nutrients in a very small space. But much, much more: a whole 300 square metres per gram of biochar, full of micropores, that's enormous! Plants get their nutrients from microorganisms that process the nutrients for the plants. When the nutrients are trapped in the tiny pores of the biochar, the plant produces more microorganisms for conversion, including for the soil, and this in turn enhances soil health.

There is considerable potential for biochar in

farming. But biochar also has a lot to offer for animals: feed coal, as biochar in animal feed is known, is intended to improve animal health, soil fertility and fertiliser effectiveness in manure, remove odours from the air in the stable and promote the effectiveness of biogas plants.

Charging biochar with nutrients

atmosfair biologically charges biochar produced on site in the Tea Estate with nutrients. There are several methods for charging, such as mixing biochar with liquid compost or organic fertiliser. To enrich the biochar with nutrients, we carried out and com-

pared different methods in a field trial in Jalinga in 2021 and 2022: for many months, we recorded data on yield each time the tea was harvested.

2022: an unlucky year ends well

2022 was a difficult year for everyone involved: at the beginning of the season, the tea bushes were destroyed by a hailstorm and a few months later the region flooded. But, even though this made the harvest poor overall, the biochar worked well. The relative yield increased by up to 45% compared to crops fertilised with compost and no biochar. This gives us hope that biochar will help farming adapt to warmer climate conditions.

Biochar production: small ovens, big impact

The biochar is produced by atmosfair in India directly on site from tea harvest residues and without expensive machinery, with our small household ovens made in India by our local partner. Biochar is produced when dry biomass, like wood residues or plant waste, carbonises by severely restricting the amount of oxygen. This is referred to as pyrolysis, an ecological and particularly sustainable process which – when carried out properly – produces pure carbon without releasing any pollutants. The employees of the Jalinga Tea Estate thus benefit from the tea harvest residues in two ways: First, for cooking on the pyrolysis oven, which supplies the heat for cooking both conveniently and cleanly and second through the biochar that remains in the oven after cooking from the crop residues. The Tea Estate employees can simply remove them from the ovens, collect them and, after enriching them with nutrients, bury them in the top layer of soil in the tea garden. We have come full circle; the carbon is back. But, this

time the carbon remains in the soil in the form of biochar. This is because the biochar is chemically inert, and the CO₂ it contains does not return to the atmosphere for over 100 years.

Negative CO₂ emissions: necessary to achieve the Paris climate targets

The most recent reports of the International Panel on Climate Change (IPCC) again emphasise the role of negative emission technologies (NETs). These technologies and processes remove the greenhouse gas CO₂ from the earth's atmosphere and permanently sequester it in the ground in various forms, such as in underground caverns or in biochar.

Negative emissions are now necessary to achieve the Paris climate targets. There is simply no time left to reduce the CO₂ concentration in the atmosphere fast enough just by lowering CO₂ emissions. We therefore need to actively remove CO₂ from the atmosphere to restore the climate system to a safe equilibrium.

Carbon offsetting and neutralisation

The following hierarchy applies from the perspective of climate change mitigation: avoid CO₂ first, reduce second, offset last. How do negative emissions, also called CO₂ neutralisation, through biochar or DAC (Direct Air Capture) with subsequent storage play a role here?

This can be answered from a climate perspective: if neutralisation is really permanent, i.e. the CO₂ is stored for many hundreds of years, then neutrali-

Negative emissions: which technologies does atmosfair rely on?

Biochar

Plants use solar energy to remove CO₂ from the air and absorb it right into their cell structures, naturally removing CO₂ from the atmosphere. Humans can process the plant biomass into biochar before decay sets in and the CO₂ is released back into the atmosphere. The carbon remains stored in the soil for centuries in the form of biochar, even if the biochar is simply applied to the top layers of soil or ploughed into the soil.

Reliable storage

The special structure of biochar helps it to resist biological degradation in the soil. For this to be really reliable, the ratio between hydrogen and organic carbon that makes up the biochar must fall below a certain value [Link: https://www.researchgate.net/publication/303101470_Persistence_of_biochar_in_soil]. This can be verified in the laboratory. Once this value is reached, scientists say that a maximum of 0.3% of the biochar degrades annually [Link: https://www.european-biochar.org/media/doc/2/c-de-senken-potential_2-1.pdf] and thus only small amounts of CO₂ are emitted. After 100 years, for example, at least 74% of the carbon is still reliably sequestered in the soil.

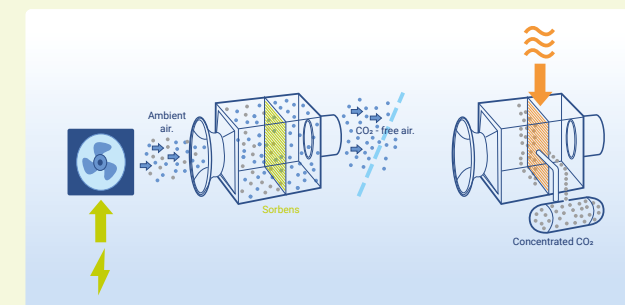
Biochar: a true all-rounder

Biochar has many other positive effects. In addition to sequestering carbon in the soil, it can also be used as a substrate for nutrients and thus enrich the soil. Especially in tropical soils, it can increase harvest yields. The biochar in the soil absorbs water from the heavy rain during the monsoon season and releases it back to the plants over a period of weeks. It stores water and prevents nutrients from being washed out of the soil. Other important factors also come into play: the basic cycles of the ecosystem remain intact. The biochar is returned to the soil exactly where the plants grew. Important minerals and trace elements are retained and the soil does not become depleted. Biochar thus combines carbon storage with sustainable agriculture.

DAC (Direct Air Capture)

In addition to the biological storage of CO₂ through biochar, atmosfair is also working on physical-chemical solutions to capture CO₂ from the atmosphere. In the Direct Air Capture (DAC) process, air is passed over a material called sorbent that absorbs CO₂. In the process, the sorbent fills up with CO₂ and separates it from the air. The challenge here is the low concentration of CO₂ (400 ppm=0.04 vol%) in the air. For CO₂ capture, large quantities of air must therefore be passed through the absorbent material. The pumping power required for this process is a driver of the high amount of energy needed for DAC. In a second step, the CO₂ captured by the sorbent is released again. Depending on the process, separation occurs either by changing temperature, electrical charge or pressure. Due to the strong bond between sorbent and CO₂, this regeneration step is also very energy-intensive. A look at the state-of-the-art of DAC also shows that currently only processes that rely on changes in heat or heat pressure have demonstrated the necessary technical maturity. A distinction is made here between high- and low-temperature processes. In high-temperature processes, the sorbent is a highly concentrated

alkaline solution that is regenerated by forming calcium oxide. At high temperatures (900°C), the CO₂ from the calcium oxide is then released again and can thus be separated. Low-temperature processes use a solid absorbent material with amino groups or an aqueous amine solution to capture CO₂ from the air. These release the CO₂ again at lower temperatures (80-480°C). The total energy needed for DAC processes is about 2.5 MWh per tonne of CO₂. That's an awful lot. As a comparison: if oil is combusted to produce energy (e.g. electricity), this electricity is not sufficient to capture the CO₂ produced during oil combustion by DAC, let alone electricity that should be left over for actual use. Avoidance therefore remains the best way forward, but DAC makes sense and is necessary for small quantities as long as the energy for this process comes from renewables. New processes based on charge exchange cycles could make significantly lower-energy CO₂ capture possible in the future. Here, depending on the electrical charge state, the CO₂ binds to an absorber electrode and is released again later on by changing its polarisation.



Carbon storage

The DAC process produces CO₂ in gaseous form, which is available either as a raw material for chemical processes, e.g. the production of electricity-based fuels in a Power-to-Liquid plant, or for permanent disposal through storage.

In contrast to biochar, which is present in a solid aggregate state and can thus simply be buried in soils, for example, other approaches are needed for the permanent storage of gaseous CO₂. These include storage as gas, e.g. in former gas and oil fields, or through mineralisation in basaltic rocks. The first approaches are controversial because, on the one hand, it is often not clear where the former gas fields were drilled and it is therefore not certain whether they are impermeable or not. In addition, CO₂ is often compressed and then injected into nearly dried-up oil fields to squeeze a last bit of fossil oil out of the rock. On the other hand, storing CO₂ in basalt formations, as is being tested in Iceland, for example, is considered much safer. In this process, the CO₂ reacts with the rock to form carbonate compounds and is thus permanently stored for thousands of years.



Nepal: The plant substrate mixed from biochar and compost makes it possible for the new trees to survive on the eroded mountain.



On the Jalinga Tea Estate, the women cook the wood in efficient wood gasifiers from atmosfair. They sell the resulting biochar to the Tea Estate to fertilise tea plants.



Each individual planting is tended for 3 years, which is a lot of work!

sation is better than conventional carbon offsetting (but not as good as avoiding and reducing CO₂). This is because normal offsetting does not reduce the CO₂ concentration in the atmosphere, it is just a zero-sum game between my emissions and the CO₂ emissions reduced by an offset project. The CO₂ in the Earth's atmosphere only decreases if it is agreed with some governments of the project countries, as atmosfair has done, that they may not count the CO₂ emission reductions achieved in the projects towards their climate targets and must do more to reach their climate targets – or with neutralisation! This is because the project countries cannot count this towards their climate targets either, so that if the countries undertake the same efforts to tackle climate change, less CO₂ will remain in the atmosphere as a result of the additional neutralisation. But neutralisation is much more complex and expensive than avoidance and reduction. With its lower costs, reduction can help to quickly mitigate the biggest sources of CO₂, such as wood consumption in many households in countries of the Global South, and to finance the transition to renewable energy. Both offsetting and neutralisation are therefore important ways to mitigate climate change that complement one another. And the further we look into the future, the more neutralisation we need.

atmosfair: negative emissions in practice

To mitigate climate change, we need both fast and scalable technical solutions for negative emissions on a large scale, but these will take more time. atmosfair is therefore active in both fields. In the area of biochar, we are now advancing three projects in Nepal and Tanzania. Biochar is a reliable measure, available in relevant quantities in the short term, that already delivers negative emissions and also benefits many other environmental and development goals. In the medium to long term, however, we see the need for the additional deployment of technological solutions that do not rely on biomass. This is because biomass is becoming an increasingly important raw material in a world without fossil raw materials, e.g. for the chemical industry, and is thus in short supply. It is therefore important that we push ahead with the technical solutions now so that later on they will be available in sufficient quantities. That is why we are also active in the area of Direct Air Capture technology (DAC) coupled with the direct air carbon capture and sequestration (DACCS). In this case, CO₂ is separated from the intake air using technical methods such as filtration or scrubbing. After capture by DAC, the CO₂ can then be stored as a gas in mineral form, e.g. in caverns or abandoned coal seams. This is where the greatest uncertainties and concerns about unwanted side effects still exist. Therefore, atmosfair has now joined a network of different technology companies and research groups to promote the development of DAC, to implement its own DAC projects and to support the important issue of CO₂ storage.

Being able to precisely measure the amount of carbon stored, as well as strict monitoring, is also a prerequisite for the distribution of NET certificates in NET projects. atmosfair thus works with external auditors and standards, such as the EBC (European Biochar Certification) and the Swiss Ithaka Institute, as we do with our offset projects. In addition to these standards, atmosfair has developed other criteria of its own for climate effectiveness, social and environmental compatibility.

Other activities – biochar

In Tanzania, atmosfair and its local partner Dark Earth Carbon will produce 2,000 tonnes of biochar every year in a large pyrolysis plant from 2023 onwards and use it as fertiliser on Tanzanian farmland. Social factors play a major role in these efforts. We use waste wood produced during forest maintenance and in small sawmills as a raw material. Before the project started, these leftover wood cuttings were burned outside. We source much of the waste wood we need from micro-forest owners. They own the smallest patches of forest and earn extra money by selling the wood. By buying the waste cuttings, our project creates an incentive to pay more attention to tree care. We also offer biodiversity courses with our partner, highlighting the resilience of biodiverse croplands and promoting native tree varieties that are well suited to the timber industry. In Nepal, in the Tanahun region, Bimala Shahi from our partner Ithaka Nepal gets up at 5 a.m. every morning to water and care for the tree seedlings on a heavily eroded mountain near Bandipur. She planted the trees last year and used a biochar substrate to grow them. The trees could not have survived here without this biochar and the three years of care by Bimala Shahi. Her work is made possible by atmosfair and the Ithaka Institute. Here, too, we use the carbon-storing biochar and thus help to reforest the mountain at the same time. Right around the corner, at the Nepalese Centre at Crop Carbon Research in Ratanpur, we are going one step further and researching robust agricultural systems on abandoned rice terraces that can withstand the harmful effects of climate change and sequester as much carbon as possible. We are comparing different carbon farming systems to demonstrate the potential for negative emissions, food productivity and ecosystem services. The Kathmandu Forestry College (KAFCOL) ensures that the results are widely shared through its students.

Activities – DAC – Air2Fuel

atmosfair is involved in various research and development projects and is in contact with several start-ups that want to take DAC technologies to the market.

The Centre for Solar Energy and Hydrogen Research Baden Württemberg (ZSW), ela Industriegas GmbH, a subsidiary of kiwi AG, and atmosfair are jointly developing a DAC plant that captures as much as 800 t of CO₂ per year. The Air2Fuel project is funded by the German government. The primary goal is to scale up an amine-based washing process developed by the ZSW, which has already been in continuous operation at the ZSW in Stuttgart for several years. In Werlte in the federal state of Lower Saxony, we plan to synthesise the captured CO₂ together with green hydrogen to form synthetic methane and then supply it to the natural gas grid, where it will replace fossil natural gas. In addition to the technical potential, we will also demonstrate the market potential of this technology and make preparations for further scaling. The amine-based washing process used here works as follows: Certain nitrogen compounds, known as amines, are dissolved in water. When ambient air is then passed through this aqueous solution, the CO₂ from this air reacts with the amines in the aqueous solution. In a second step, the washing solution saturated with CO₂ releases the CO₂ again by heating, it can then be captured and used again. In addition, we have also partnered with various universities and institutes in other research projects. In addition to the development of other DAC processes, these projects also address the issue of long-term storage and the underlying regulatory conditions needed. We also cooperate with start-ups that are developing other DAC methods on the basis of diverse processes.



Our standards

Approach

Principles

- Offsetting is only ever the second-best solution, avoiding emissions is much more effective
- Climate change mitigation is the priority – not the maximization of revenues
- A key element is building climate awareness – it fosters long-term avoidance of the initial carbon emission
- Optimizing travel with the help of business travel specialists, incl. video conferencing

Action

- No cooperation with actors that do not comply with atmosfair's standards – e.g. in carbon reporting – despite the possibility of financial gains for atmosfair.
- No offsetting of activities for which better and less carbon-intensive solutions are available – e.g. emissions due to car travel or electricity consumption
- Representation of the real climate impact (see carbon calculation), regardless of the industry

Carbon mitigation project

Principles

- Permanent reduction of carbon emissions
- Additionality
- Contribute to north-to-south technology transfer
- Direct support to local population
- Contribute to protecting the local environmental
- Consideration for local circumstances when choosing technologies
- Coherence with national development efforts

Action

- All projects must be compliant with two standards: CdM (UN) and Gold Standard (environmental NGOs); up to 10% savings under Gold Standard Microscale
- CdM + Gold Standard + X: X stands for atmosfair's own additional criteria, such as the carbon quota as proof of additionality or the exclusion of unsuitable or high-risk project types (e.g. afforestation projects)
- Calculation and monitoring of carbon emission reductions according to UN standards
- Qualified and UN-certified auditors (e.g. TÜV) who also bear liability
- Documentation of all audit reports on the website of the UN Climate Secretariat
- Projects are planned and developed by atmosfair and implemented alongside experienced partners in developing countries

Gold Standard
Climate Smart & Sustainable Development



United Nations
Framework Convention on
Climate Change

Carbon emission calculation

Principles

- Comprehensive
- Scientifically sound
- Well documented
- Verified

Action

- Incorporation of all climate effects of air travel (e.g. condensation trails, ozone formation, etc.) based on current scientific findings (IPCC), meaning that the calculated climate impact is significantly higher than CO₂ alone
- Self-developed emissions calculator, verified by the German Federal Environment Agency
- Documentation of all data sources and methods used on the atmosfair website



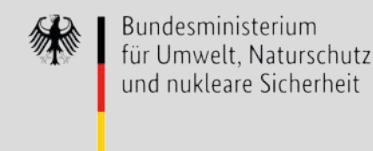
Organization & Finances

Principles

- Non-profit
- Independent
- Efficient
- Transparent
- Responsible

Action

- Low administrative costs: over 90% of donations flow directly into the climate change mitigation projects in the global south, for planning, implementation and operations
- In Germany, donations are tax deductible, under the supervision of German tax authorities
- Legal form gGmbH (non-profit): liability and publication in the commercial register
- advisory board composed of high-profile patrons and environmental experts, including representatives of the environmental ministry, NGOs and the scientific community



atmosfair was established in 2004 in a research project of the Federal Ministry for the Environment. In this project, demanding standards for voluntary CO₂ compensation were developed. The atmosfair standards act as a benchmark for the CO₂ offsetting market that has emerged in the meantime. atmosfair is a multiple test winner in international comparative studies.

Sun and water for farming in the Atlas mountains

The women farmers in the Atlas Mountains are used to the hot sun beating down on their necks and the dry conditions. These are not easy conditions for farming in this region of Morocco, where irrigation is essential. The falling groundwater levels, which endanger the fertility of the soil, as well as desertification, are additional factors that put pressure on one of Morocco's most important economic sectors.

Our Moroccan project partner Solar Future therefore set out to provide farmers with access to low-cost and resource-efficient irrigation of their farmland using solar energy. Solar Future is concentrating on the rural regions of Drâa-Ta-filalet and Oriental, which are poorer regions of the country.

As farmers here often are not connected to the public electricity grid, they irrigate their farmland with antiquated diesel or butane pumps and ditch irrigation systems, which lose a lot of water. Although the Moroccan government subsidises butane gas, it is often expensive to buy the fossil fuel; moreover, it has to travel

long distances in remote areas. Not least the weeks-long curfews during the COVID-19 pandemic showed that the dependence on diesel and butane can quickly spell disaster here.

Subsidising butane gas, which is omnipresent in Morocco, is controversial. It was only in autumn 2022 that the World Bank urged the country to cut subsidies to trigger a change in consumer behaviour and generate climate benefits¹. For many farmers in Atlas, this would have been a devastating development.



Our project partner Solar Future and local farmers in front of our solar installation near Boudnib in the province of Errachidia, Morocco.

¹ <https://www.moroccoworldnews.com/2022/11/352231/world-bank-urges-morocco-to-cut-butane-gas-subsidies-increase-water-tariffs>



The water pumps are operated entirely with solar energy.

The hire-purchase model offers farmers an alternative to cheap gas

Solar Future has found a solution for farmers that has been well received: stand-alone solar installations that are connected to modern pump and drip irrigation systems, thereby replacing fossil fuels and saving groundwater reserves. During the day, when the sun is shining, water is now pumped into a reservoir where it is then distributed to the fields. Solar power generation saves about 21 tonnes of CO₂ per year per installation.

The cornerstone is the financing model, which allows farmers to overcome the high investment threshold for a new solar installation. Instead of buying fuel again every month, the women farmers pay instalments to Solar Future until they own the installation after 6 years. They start saving money right after it is installed. atmosfair and Solar Future have already set up 170 solar installations with this model since 2020, with a combined capacity of almost 2 MWp. With funding from atmosfair and crowd-investors from the Green-

Vesting platform, we can provide around 60 more solar installations each year. And thus the use of a seemingly infinite resource here.



Local installers assembling a 9.8 kW solar installation.

Harman: “That which endures”



Basem, an electrician from our partner TopWay, installs a solar module on the school roof

In cooperation with Our Bridge from Oldenburg, atmosfair is providing solar energy to an orphanage in Iraq. In 2022, we were able to install a battery storage system in the solar installation. Funding is provided by the federal state of Baden-Württemberg and corporate donors such as BayWa R.e.

Born out of the plight of refugee children in northern Iraq north of Mosul, German-Kurdish students in Oldenburg founded the organisation Our Bridge Oldenburg e.V. It builds a bridge to provide children with vital assistance quickly and to be a light in the darkness for them. The first step is to register orphans, half-orphans and children with special needs. They were provided with drinking water packages and radiators, financed by sponsorships. In 2017, OurBridge built an orphanage, which has since become a school for orphans. The orphanage, or school, is called Harman, which means “that which endures” in Kurdish. This is a promise from OurBridge to the children.

atmosfair improved the energy supply of the orphanage in 2022 by installing solar panels with battery storage. More panels are set to be added in Q2 2023. Due to the many power outages, the school has had to rely on a diesel generator until now. This will be replaced by solar energy after the installation's final expansion. OurBridge benefits from lower energy costs and by eliminating the noise and odour caused by the diesel generator. At the request of OurBridge, the solar panels were installed on high above the roof of the school so that it protects the children from the sun when they play on the school roof.

The school offers classes for 400 children in two shifts in the morning and afternoon. The school children are picked up from the camps in the morning and brought back in the afternoon. In addition to the classes, the children also have a warm meal and some privacy to wash themselves in sanitary facilities. It quickly became apparent while working with

the children that they also needed mental health care. Many are traumatised by their experience of being attacked and forced to flee, and long for a safe place. More orphans and half-orphans were steadily arriving in the camps, either freed from slave markets after years of IS captivity or liberated by the Kurdish army in house-to-house combat.

The 56 kWp photovoltaic system with 60 kWh battery storage is financed by funds from the federal state of Baden-Württemberg through the Stiftung Entwicklungs-Zusammenarbeit Baden-Württemberg (SEZ) and the Klimaschutzstiftung Baden-Württemberg (KSS), as well as by donations from BayWa r.e. The system is being installed by the long-standing partner TopWay.

When the Islamic State (IS) attacked the Shingal region in northern Iraq in 2014 and tens of thousands of refugees fled to the lake north of Mosul, thousands of orphans who had lost parents and relatives in the attack were among them. Not all of them are able to find room in the quickly overcrowded UN refugee camps, so unofficial satellite camps are set up in abandoned ruins and provisional tents. Supplies in the camps and protection against cold, heat and disease are inadequate, so that many of the weaker people fall ill.

A chance for the textile industry

The Aid by Trade Foundation and atmosfair have been cooperating since 2021. We are working together to implement measures to benefit the climate in cotton fibre production in western and eastern Africa.

The Aid by Trade Foundation is a non-profit organisation founded by the entrepreneur, Professor Michael Otto, in Hamburg in 2005. With the “Cotton made in Africa” initiative, it supports small farmers in western and eastern Africa with training in sustainable cotton farming and safe working conditions. With the CmiA Carbon Neutral project, the Aid by Trade Foundation offers

climate-friendly cotton in which the CO₂ emissions of cotton production are not only offset, but also reduced through joint projects with atmosfair. We are currently testing measures in Nigeria. Here, CmiA farmers use our atmosfair Save 80 cookstove. We are also planning to equip a ginning factory with photovoltaics to meet our own electricity needs.



Interview with Alexandra Perschau, Head of Standards & Outreach at Aid by Trade Foundation

Is the cotton market ready to evolve towards carbon neutrality?

Textile retailers are aware of the challenge that climate change poses to the textile industry. They are aware that their industry makes a significant contribution to CO₂ emissions and needs to take action. Many international sellers and brands take this responsibility seriously and have set binding climate targets.

How does cooperation with the local cotton partners work in practice?

For the Aid by Trade Foundation and the Cotton made in Africa Initiative, what are known as “cotton companies” are key actors. This is where the harvested cotton is processed, i.e. the fibres and seeds are separated and the cotton fibres are pressed into bales, which are then ready for the textile chain. The CmiA partners who have to meet the criteria sign contracts with the cotton growers at the beginning of a season. On the one hand, they finance seeds, pesticides and fertilisers, and provide advice and training on agricultural practices. Overall, Cotton made in Africa operates in 10 African countries with around 20 cotton companies.

How have the CmiA carbon-neutral measures been received?

The cotton companies are generally positive about the measures. For example, women farmers whose crops depend solely on rain struggle with irregular rainfall, as well as droughts and floods. That is why they want to increase crop resilience and reduce their own CO₂ emissions at the same time. One crucial contribution is soil protection, for example through compost instead of artificial fertilisers. We are currently testing specific offset measures with a CmiA partner in Nigeria. Here, CmiA farmers use the Save 80 cookstove from atmosfair. We are also equipping a ginning factory with photovoltaics to meet our own electricity needs.

What would you like to see in 2023?

We have only just started with CmiA Carbon Neutral. The feedback so far has been extremely positive. And of course I would like us to find a way to enable the textile industry to actually integrate CmiA cotton from the Carbon Neutral Initiative into their own climate strategies. By focusing on the cotton instead of the shirts, jeans and socks that are sold, even though the textile industry may think that the cart is being put before the horse, ultimately cotton is always the starting point. And if it is not carbon-neutral, then the whole chain cannot be carbon-neutral.

Electricity for medical centres in Madagascar

Healthcare with solar energy



Solar panels installed on the roof of the medical centre in Manakaravavy

atmosfair is electrifying medical centres in Madagascar together with Doctors for Madagascar and our partner company Anka Madagascar. Four centres were electrified in 2022; another 8-10 medical centres will follow in 2023. We would like to thank the donor wpd AG.

Basic healthcare services are provided in rural areas of Madagascar through medical centres. However, most medical centres lack a reliable power supply, which severely affects the quality of care. Healthcare workers must perform emergency medical procedures and deliver babies at night with torches or candles. Vaccines and many medications cannot be safely refrigerated. Since most of the medical centres are located in remote areas, they will not be connected to the national power grid in the near future.

Madagascar is one of the poorest countries in the world and ranks 164 of 189 countries in the Human Development Index. The COVID-19 crisis wiped out more than a decade of gains in per capita income and pushed the poverty rate to a new record high of 81%. The poverty rate is even higher in the rural areas in the southern regions of Atsimo-Andrefana and Anosy, where atmosfair operates. Malnutrition, especially among children, is a widespread problem here.

Solar energy in the Dominican Republic

atmosfair is building an 11 MW solar installation in the municipality of El Toro in the east of Santo Domingo, one of the poorest regions in the Dominican Republic. The installation will significantly improve the supply of electricity to around 15,000 households.

In 2022 atmosfair has made significant progress in the development and construction of the installation. Our partner Maranatha Energy completed the transmission line, and atmosfair ordered components such as the PV modules, transformers and substructures at the end of 2022. Since the beginning of 2023, installation has been in full swing and we expect to see it successfully go into operation in Q3 2023.

Our local partner Maranatha Energy was already granted all of the permits at the beginning of 2021. In 2022, the original route of the transmission line had to be changed due to subsequent objections and extended by another 1.5 km. In addition, it was discovered during the excavation work that there is a layer of porous rock under the topsoil in some spots, which the local contractor had to compress at considerable expense.

One challenge is the high investment costs, especially as a result of the necessary construction of a 5-km-long transmission line. However, the transmission line, together with our solar installation, will significantly improve the power supply in El Toro, and the current power outages, which often last for hours without notice, will soon be a thing of the past.



The Maranatha Energy team assembling the transmission line to El Toro

Science-based targets and offsetting – more than empty promises

“Our company is climate-neutral” or “Our production is climate-positive” – Big promises that companies often don’t have to do much to keep. This was shown as recently as September 2022 by two journalists from Die Zeit newspaper, who paid EUR 571 to offset their fictitious company, a flower shop, and claim to be a “climate-neutral company” – without having to say a word to the offset scheme about what they were doing to avoid and reduce emissions in the first place. These examples of greenwashing also cast a bad light on companies that really want to do something to tackle climate change. How can these companies go about it and how can they credibly communicate their efforts to combat climate change to the outside world and avoid accusations of greenwashing?

Well-known atmosfair corporate clients rely on the Science Based Targets Initiative (SBTi). The initiative, based on a partnership between the Carbon Disclosure Project (CDP), the United Nations Global Compact, the World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), helps companies set ambitious emissions reduction targets on request. SBTi also offers guidance on how companies can meaningfully integrate offsetting into an ambitious climate strategy and how they can accurately report on their climate activities to the outside world.

Step 1: Set and achieve ambitious reduction targets

Avoidance and reduction of emissions comes first, followed by offsetting to cut global greenhouse gas emissions in half by 2030 and achieve net-zero emissions by 2050. SBTi helps companies to set individual reduction targets – both for the short term (5-10 years) and for the long term up to no later than 2050 – that are compatible with meeting the global targets based on the current state of research. SBTi reduction targets (Science Based Targets, SBTs) should cover at least 95% of emissions within the company, in Scopes 1 and 2. If more than 40% of greenhouse gas emissions are in the upstream and downstream value chain (Scope 3), SBTi recommends setting ambitious, measurable Scope 3 targets that include at least two-thirds of Scope 3 emissions, and at least 90% in the long term.

According to SBTi, companies should report on the progress they have made towards achieving their targets annually. At least every 5 years, the targets must be reviewed and, if necessary, adjusted to take into account new scientific findings or new SBTi criteria.

Step 2: Offset any additional remaining emissions

Targets are often set quickly, but for many companies, it is a challenge to meet them. When enterprises fail to meet their targets simply by reducing their emissions, offsetting seems to offer a quick way to help them achieve the net zero they are aiming for. But SBTi clearly states in its Corporate Net-Zero Standard that they must achieve their short- and long-term reduction targets without offsetting – by avoiding and reducing emissions within the company and in the value chain. Any remaining emissions that occur when the long-term SBT is achieved may not be offset by companies, but must be removed from the atmosphere, “neutralised” (e.g. through direct air capture, see section on “negative emissions”), to reach net-zero emissions. However, emissions also occur along the target pathway until companies reach net zero (through avoidance, reduction and, if necessary, neutralisation). SBTi sees offsetting these remaining emissions through measures outside its own value chain, e.g. through climate projects in the Global South, as a positive contribution to global climate change mitigation. By promoting emission reductions in countries of the Global South, companies are advancing the achievement of net-zero emissions worldwide.

Step 3: Communicate efforts to tackle climate change transparently and effectively

How can companies report on their activities to the outside world without being accused of greenwashing? Like atmosfair, SBTi also relies primarily on transparency in its communication: “The whole truth, no more and no less” is SBTi’s advice to companies when communicating their climate efforts to the outside world. On its website, the initiative lists specific do’s and don’ts to prevent companies from falling into a greenwashing trap. In particular, SBTi explicitly advises against using claims such as “CO₂-neutral” or “CO₂/climate-positive”. There is no clearly established definition for these claims on the voluntary carbon market. What is behind them is not usually obvious to consumers and they can be misleading.

Instead of climate neutrality or even climate positivity, SBTi simply mentions “net-zero emissions” as a long-term goal. Companies are allo-

wed to say that their activities are consistent with this goal if they have set SBTs for both the short and long term, have had them reviewed by SBTi and, of course, comply with them.

Also, according to SBTi, companies should not suggest that they use offsetting to achieve their goals. When companies claim that they are already achieving their long-term goal of “net zero emissions” through offsetting, we at atmosfair take a less critical view of this if two conditions are met: 1. The companies only offset emissions that are unavoidable given the current state of technology. Offsetting must not substitute measures taken by companies to reduce emissions within their own value chain. 2. Companies are transparent in communicating that they use offsetting so that consumers are not misled. An example of how offsetting can be used to complement an ambitious climate strategy and for good communication is the Hamburg-based Otto Group with its Hermes Versand (we reported on this group in the Annual Report 2021).

Unlike the offset schemes tested by the fictitious flower shop, atmosfair first convinced itself that Otto/Hermes are serious about climate change mitigation and that offsetting merely complements the companies’ goals and measures to reduce and avoid CO₂ emissions. Instead of using a climate neutrality label, Otto/Hermes transparently advertise that they ship “CO₂-neutral through offsetting”. And finally, unlike the flower shop, Otto/Hermes can be sure that their contributions to climate change mitigation actually benefit the climate. This is because atmosfair only uses a maximum of 10% of its income for administration and 90% in climate projects. This way, offsetting makes a meaningful contribution to climate change mitigation and is not just a bunch of empty promises.

From the donation to the project

Expenditures for climate change mitigation increase to almost EUR 26 million

Since 2005, atmosfair has been operating and financing climate projects around the world with voluntary contributions to climate change mitigation. The first step is for us to sign a support agreement with the project operator. This agreement stipulates binding reduction targets for carbon dioxide emissions each year and how the project will be supported by atmosfair. Up to one and a half years can elapse between the donation and the actual reduction of carbon emissions. This is time that we need for project setup and operation. Approved UN assessors then verify the reductions in carbon emissions outlined here.

The timeline is as follows:

Timeline for the use of your donations in climate projects

Start: atmosfair receives your contribution to climate change mitigation

Months 1 – 2: atmosfair or the partners buy hardware such as building materials or photovoltaic panels. Whenever possible, we buy materials locally, keeping the value chain as local as possible. But this is not always feasible because many countries in Africa do not, for example, produce steel, they only import it. We still try to have at least smaller components such as pots for efficient cookstoves produced locally, even if the quality is sometimes not as good as with stainless steel. The best way to achieve our ambition is to build small-scale biogas plants for farms such as in Nepal or Kenya, where almost 100 % of the building materials (clay bricks and floor fill) come from the region.

Months 3 – 4: Materials are delivered to the project partners. There are often problems with the customs authorities when we have to import. Sometimes shipments are stuck in port for months and often incur significant customs duties. We try to negotiate with the authorities

with our own local staff and with experts, but this is always a difficult undertaking, especially with our zero tolerance for corruption. Logistics within countries are also often problematic, e.g. when the security situation causes delays.

Months 5 – 6: Production and distribution of climate products (efficient cookstoves, small biogas plants) or project setup (e.g. photovoltaic installation for a village). Depending on the technology, production may mean simply screwing together prefabricated components, as has been the case so far in Rwanda with the efficient cookstoves or it may involve pressing, bending and screwing together steel plates, as will be the case in the future in our local cookstove production in Nigeria and Rwanda or it could mean a small construction site where a biogas plant in Nepal is installed over several days, or a complex assembly process with the necessary detailed planning in the case of a photovoltaic system. In the case of household projects, sales are an additional factor, because we sell the technologies at a price that we can significantly reduce with the contributions to climate change mitigation. Especially for the efficient cookstoves, this often means teams travelling many hundreds of kilometres in delivery vans to give sales presentations in villages and later deliver the cookstoves. atmosfair needs the most local staff on the ground for the activities at this level, which can mean several hundred jobs in large projects.

Months 7 – 19: Carbon emissions are physically reduced during the first operating phase of the project. Here, the technology is in operation for the first time and immediately reduces CO₂ physically because, for example, a diesel generator can be switched off for a district. The users are happy.

Months 20 – 22: Reductions in carbon emissions are verified by a UN-accredited external assessor (e.g. TÜV), assessment reports are created. This step is later repeated once a year. The assessor inspects installations and measuring instruments (e.g. electricity meter for a photovoltaic installation), interviews the operators and checks all data collected that is required for the respective UN method for the project type. This allows the assessor to

Expenditures for climate projects in 2022

Project category	Project	Expenditures 2022*	
Efficient cookstoves	India	1%	43%
	Nigeria	36%	
	India: Jalinga: biochar	1%	
	Uganda electric cooking	0%	
	Rwanda	5%	
Biogas & biomass	Kenya: small biogas systems for dairy farmers	1%	16%
	Nepal: Biogas	14%	
	India, Tonk: electricity from mustard harvest residues	0%	
	Tanzania compost	0.3%	
	Power generation from coconut wood waste on Mafia Island	0%	
	Germany: trial project DAC/PTL	1%	
Wind, water, sun	Honduras: small hydropower plant	0.6%	38.8%
	Kenya: solar water treatment	2.7%	
	Madagascar: rural electrification	6.7%	
	Mali: rural electrification	6.2%	
	Senegal: Solar	2%	
	Ghana: solar kiosk	0.1%	
	Morocco: solar drip irrigation	1%	
	Brazil: agrophotovoltaics	0%	
	Dominican Republic	5.8%	
	Burkina Faso	2.8%	
	Mongolia	1%	
	Nigeria	6%	
	Togo	4%	
Educational and transformative projects	Education projects in Germany: Energiesparmeister and DUA	0.4%	1%
	Transformative projects	0.3%	
	Kenya electro taxis	0.5%	
Energy mix	Nepal new energy (Helambu and Langtang Trek)	0.2%	0.3%
	Nicaragua climate friendly island	0.1%	
Total expenditures in 2022: EUR 25.941.265,69		Summe	100%

* Small shares = maintenance + ongoing operations, large shares = new projects and expansion

calculate the actual carbon emissions reductions of the previous assessment period. The assessor must be re-accredited by the UN every three years and is liable for any errors. The UN publishes its reports on publicly accessible websites so that anyone who is interested can view them and raise objections if necessary. In the area of project funding by NGOs, this provides a very high degree of transparency and reliability.

Months 23 – 24: Assessment reports are cross-checked by UN bodies and additionally verified by the Gold Standard, which confirms

the project's contribution to sustainable development in the host country in addition to the emission reductions. This is a purely administrative step and in practice usually means multiple feedback loops between the assessor and the UN bodies until all of the committee's questions to the assessor have been clarified.

Goal, month 24: The UNFCCC secretariat issues the Certified Emission Reductions to atmosfair's registry with the German Emissions Trading Authority, which is part of the German Environment Agency (UBA). This final step no longer affects the project itself, but is still important for

Offset obligations and carbon reductions in 2022

Greenhouse gas reductions, achieved and verified by UN auditors(1) [1,000 t CO ₂]		2005 - 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 ⁽²⁾	Total planned until end of 2023 ⁽²⁾
Efficient cookstoves	Nigeria: efficient cookstoves	2	17	2	18	0	124	86	36	40	28	20	19	372
	India: efficient cookstoves		5	18	75	20	20	103	140	149	273	533	656	1336
	Cameroon: efficient cookstoves	3	9	10	9	10	10	0	0	0	0	0	0	51
	Lesotho: efficient cookstoves		3	18	22	25	28	29	29	26	25	25	0	204
	Rwanda: efficient cookstoves				7	0	98	108	124	161	193	258	334	949
	Ethiopia World Food Programme efficient cookstoves								25	0	0	0	0	25
Biogas & biomass	India: electricity produced from crop residues	19	117	0	65	69	0	56	69	62	54	0	86	511
	India: biogas systems for households	24	21	20	0	0	0	0	0	0	0	0	0	65
	Kenya: small biogas systems for dairy farmers					3	0	5	7	0	0	0	7	22
	Thailand: biogas from waste			50	0	0	0	0	0	0	0	0	0	50
	Nepal: biogas					60	299	214	712	485	1192	902	1469	5333
	Indonesia: composting of household waste		1	1	1	1	1	1	1	0	0	0	0	7
Wind, water, sun	Honduras: small hydropower plant	64	60	23	0	41	0	0	289	34	0	44	34	295
	Nicaragua: wind power	119	0	45	103	0	0	0	0	0	0	0	0	266
	Viet Nam: wind power					10	32	0	0	0	0	0	0	42
	South Africa: solar thermal power for warm water in households						9	0	0	0	0	0	0	9
	Madagascar											3	3	
	Senegal Solar PV								50	85	67	120	145	467
total		230	233	186	300	239	621	602	1,220	1,041	1,808	1,907	2,754	10,004
Reduction obligations based on voluntary climate contributions received		517	90	90	108	71	86	129	488	336	372	426		
Reduction obligations from carbon projects commissioned by customers		137	81	95	86	221	389	408	368	362	1136	1124		
Total reduction obligations		654	171	185	193	291	475	536	855	698	1508	1550		
Accumulated GHG reduction obligations		654	825	1,010	1,203	1,494	1,970	2,506	3,362	4,060	5,567	7,118		
Greenhouse gas reductions, verified by UN auditors, accumulated		231	464	650	950	1,189	1,809	2,411	3,631	4,671	6,479	8,386		

1 This table shows greenhouse gas reductions for the calendar year in which they are verified by external auditors and certified by the standard used. Some of the greenhouse gas reductions achieved in 2022 are not yet recorded this year because they have not yet been certified.

2 Stated greenhouse gas reductions in 2023 are a forecast. Values may change in future annual reports.

atmosfair's documentation (see below). Registering atmosfair's emission reductions with the UBA is a guarantee for donors, as the data is processed and saved by an official governmental body that acts as an independent third party.

In total, it takes about

- 6 months for your money to physically start reducing CO₂ in a project
- 1.5 years until the first CO₂ reductions are certified by an independent assessor
- 2 years until atmosfair receives formal proof of carbon emission reductions from the UN

The table above shows the carbon emission reductions atmosfair has achieved in the final phase – in other words, emissions that have been reduced, verified, reviewed and confirmed by the

UN. You can view these carbon emissions reductions in the assessment reports published on the website of the United Nations Framework Convention on Climate Change (UNFCCC), independently from atmosfair. Links to these UNFCCC pages are available on our atmosfair website. At the end of the table, these carbon emissions reductions are compared with atmosfair's reduction obligations to donors. As described above, we have shown the carbon emissions reductions in the final phase, but the reduction obligations are shown in the first phase when your contribution to climate change mitigation is received.

Although atmosfair actually needs as long as two years between when the donation is received and the formal UN verification of the relevant carbon emissions reductions, the table shows that atmosfair has been able to reduce this time span to zero in the meantime. The approx. 7.1 million tonnes of reduction obligations that atmosfair entered into with its donors and customers by the end of 2022

were thus already offset by 8.4 million tonnes of formally verified carbon emissions reductions by the end of 2022. This means that atmosfair not only fulfilled all its obligations in 2022, it also created a cushion of a good 1.2 million tonnes of carbon emissions reductions for 2023.

The reason is that atmosfair conservatively calculates and plans the expected annual reductions in carbon emissions of its own projects. In addition, some atmosfair projects have already been running longer than conservatively planned and thus generate additional reductions for atmosfair every year. In 2022, 1.9 million tonnes of carbon emissions reductions in atmosfair projects were certified by UN assessors. Due to the COVID-19 pandemic and delays in global supply chains, expansion has been delayed in some projects. Nevertheless, we spent about 26 million euros on climate projects (see financial section, pages 26-31). Of these funds, about 43% went to efficient

cookstove projects, around 16% to biogas and biomass projects and 38.8% to solar projects, including solar agriculture (agrophotovoltaics) and solar drinking water treatment. Approximately 1% of expenditures in 2022 were used to fund educational and transformative projects, mainly in Germany.

In some of the ongoing projects, the table indicates zero carbon emission reductions. This only means that while the project is running successfully and carbon emissions are being physically reduced, the UNFCCC has not published a report on the project during this calendar year. Since the verification periods of projects can begin and end independent of calendar years and do not always run exactly 12 months, emissions reductions listed here can fluctuate year by year, even for projects running on an ongoing basis.

Balance sheet total

Summary

At over EUR 29 million, income increased by more than EUR 8 million from 2021 to 2022.

atmosfair was able to invest around EUR 26 million in climate projects in 2022.

atmosfair empfing auch 2022 keine Fördergeldatmosfair again did not receive any public funding in 2022. The only income atmosfair received from public institutions came from participating in the tender for carbon offsetting of the business trips of the German government. No offsetting customer contributed more than 10% to total income; this means that atmosfair, a non-profit, limited liability company (gGmbH), maintained its financial independence. For more than 10 years, income from business operations has supplemented donations. This helps to cover some of the costs incurred by our non-profit activities. In total for 2022, for every EUR 100 donated, more than EUR 95 were invested in the direct purchase of climate technologies – e.g. efficient cookstoves or solar energy systems for households – or paid to the planners and developers of projects for green electricity generation; atmosfair used just EUR 5 of each EUR 100 donated for staff to support donors as well as for other costs including IT, accounting, public relations work, rent and credit card fees

Oversight / Organisation / Non-profit status

The shareholders' meeting of atmosfair gGmbH was expanded in 2021 and now consists of equal shares of the existing shareholder Foundation for Sustainability (Stiftung Zukunftsfähigkeit) and Dr Dietrich Brockhagen. While Stiftung Zukunftsfähigkeit alone appoints the members of the company's supervisory bodies, Dr Dietrich Brockhagen is responsible for all business matters. He also manages the company's operations together with the second managing director Steffen Pohlmann subject to the oversight of the company's supervisory bodies based on the two-person rule.

The first supervisory body is the independent advisory board for atmosfair standards, 2022 consisting of representatives of the climate-relevant federal ministries (Federal Ministry for Economic Affairs and Climate Action (BMWK), Federal Ministry for Economic Cooperation and Development (BMZ), Federal Foreign Office (AA)), one representative each from the Zurich University of Applied Sciences (ZHAW) and HTW Berlin University of Applied Sciences, and one representative from Germanwatch. It met three times in 2022. The Advisory Board monitors the executive management in questions related to environmental integrity and decides whether to approve new climate projects, further develops and monitors atmosfair standards, including emissions calculation and approves new company partnerships.

As a second supervisory body, the Stiftung Zukunftsfähigkeit appointed a Supervisory Board consisting of three members in 2021. The Supervisory Board is an independent body that monitors the propriety and economic integrity of the company and exercises the following powers as stipulated in the Articles of Association:

- a) resolution on the rendering of accounts
- b) discharge of the company management
- c) appointment of the auditors
- d) deciding on the remuneration of the company management

The fiscal authority certified the non-profit, limited liability company's tax exemption for 2022. The non-profit GmbH duly issued donation receipts for the contributions to climate change mitigation received in 2022. To make its own work transparent for the public and for donors, atmosfair complies with the voluntary commitment of the Initiative Transparent Civil Society and publishes information on the requested data on its website in accordance with the initiative's guidelines.

Financially independent

In 2022, atmosfair's activities were fully financed through voluntary donations for carbon offsetting as well as income generated by its business operations, which is permitted for non-profits to a limited extent. The shareholders did not pay any money to atmosfair in 2022 nor did atmosfair pay any money to the shareholders.

Expenditures, climate project planning

The largest share of expenditures was incurred for the development and management of climate projects. These included the purchase of technologies and construction material (e.g. efficient cookstoves), setting up and running projects, including verification by UN-accredited auditors and the salaries of the local project teams. In total, atmosfair spent a good EUR 26 million here. Expenditures other than those for carbon

2022 balance sheet

Assets	2022 EUR	2021 EUR
A Fixed assets	277,068.00	282,023.00
I Intangible assets	3,00	3,00
II Tangible assets	5,645.00	10,600.00
III Financial assets	271,420.00	271,420.00
B Current assets	24,345,269.15	9,832,062.75
I Inventory	2.00	2.00
II Receivables		
Trade accounts receivables	17,369,078.03	1,803,462.93
Other assets	5,720,876.10	72,610.08
III Cash on hand, bank balances, etc.	1,255,213.02	7,955,989.74
C Prepaid expenses and deferred charges	20,861.13	2,009.62
Balance sheet total	24,643,198.28	10,116,097.37

offsetting projects included personnel costs for project planning and implementation, which amounted to about EUR 870,000 in 2022. In total, since its formation, atmosfair has supported climate projects with around EUR 116 million.

When calculating the funding commitments for climate projects in a given year, atmosfair usually takes the average of the income of the last two years. This satisfies the requirement to use funds in a timely manner and gives atmosfair sufficient security for long-term funding commitments to project partners in the Global South and the planning and development of new projects, even if income declines in the meantime. Moreover, the lead time of about one year between the project idea and the use of funds for hardware such as efficient cookstoves or solar installations means that new projects cannot be implemented any other way in practice. From 2021 to 2022, atmosfair's income increased by more than EUR 8 million. Based on the above principle, this would have resulted in a funding volume of about EUR 25 million in 2022. This was exceeded by atmosfair. At the same time, in 2022, the bank balance decreased from EUR 7.9 million (2021) to about EUR 1.2 million. atmosfair formed net provisions of a good EUR 1 million in 2022.

Salaries under the German public-service salary scheme (TVöD) for employees and management

After project-related expenditures, personnel costs are atmosfair's second highest cost factor. The salaries of atmosfair employees are based on the German public-service salary scheme (TVöD), with pay grades ranging from project manager to management at levels 11-15. The total general administrative costs for telephone, postage, insurance, and office supplies amounted to around EUR 100,000 while rent, office renovation and maintenance accounted for a total of approximately EUR 300,000 because atmosfair moved into a new office in 2022.

Other administrative costs can be found in the income statement.

Liabilities	2022 EUR	2021 EUR
A Equity	17,522,348.51	4,624,049.88
I Subscribed capital	25,000.00	25,000.00
II Reserves for projects provided for by the Articles of Association		
Short-term reserves for climate projects	0.00	0.00
Available reserves (also for climate projects)	17,497,348.51	4,599,049.88
B Provisions	5,892,537.19	4,830,589.57
Tax provisions	405,903.16	0.00
Provisions for climate projects	5,486,634.03	4,830,589.57
Other provisions	0.00	0.00
C Liabilities	1,228,312.58	661,457.92
Trade accounts payable	331,571.30	293,301.88
Other liabilities	896,741.28	368,156.04
D Deferred income	0.00	0.00
Balance sheet total	24,643,198.28	10,116,097.37

Administrative costs of 4.7%

One of the atmosfair standards requires contributions to be used efficiently; this means that only a small percentage of contributions may be used for atmosfair's own costs, i.e. those funds that are not used for climate projects, but rather by atmosfair for its own administrative and fundraising work. In 2022, a total of just under EUR 1.4 million was spent on these activities, which, in addition to the above-mentioned items, was mainly accounted for by personnel costs as well as material costs for public relations as well as IT, accounting, credit card fees, travel expenses, etc. (see table blocks b) and c) under expoenses). This corresponds to administrative costs of approximately 4.7% of income. The administrative costs are also so low because atmosfair continued to forgo all forms of paid advertisement such as promotion teams in 2022 and instead used campaigns with relevant content to gain visibility in the media at no cost. The celebrities involved also help to publicise atmosfair free of charge.



New: DZI Seal of Approval

The DZI audits non-profit organisations in Germany for the use of their donations and appropriate organisational structures. atmosfair has been awarded the DZI Seal of Approval and was attested a particularly low percentage of administrative costs - 3.8% in 2020 and 4.4% in 2021. These are outstanding values in Germany. The DZI uses an elaborate approach for the calculation and arrives at lower values for the administrative costs than atmosfair itself. [\[Link: https://www.dzi.de/organisation/atmosfair-ggmbh/\]](https://www.dzi.de/organisation/atmosfair-ggmbh/)

Relocation and rent

atmosfair looked hard for new office space in 2020 and 2021 because the landlord for the old office in Berlin Kreuzberg gave notice due to construction.

In April 2022, atmosfair moved to a new office in Berlin Neukölln and is now well positioned for the future. The new office has enough space for atmosfair's growing team, and the rent of EUR 14/ m² falls in a range that is hard to find in Berlin and

absolutely reasonable for the non-profit. In addition to location and size, price was an important factor in the selection of the new premises.

Profits generated increase the funding volume for climate projects

In 2022, atmosfair earned surpluses in the commercial business operations with services for companies totalling EUR 1.6 million after taxes that were generated through the operation of climate change mitigation projects on the behalf of customers, sales of carbon accounting software, and consulting services (climate service for companies). atmosfair uses the surpluses directly for climate projects.

Reaching our goals

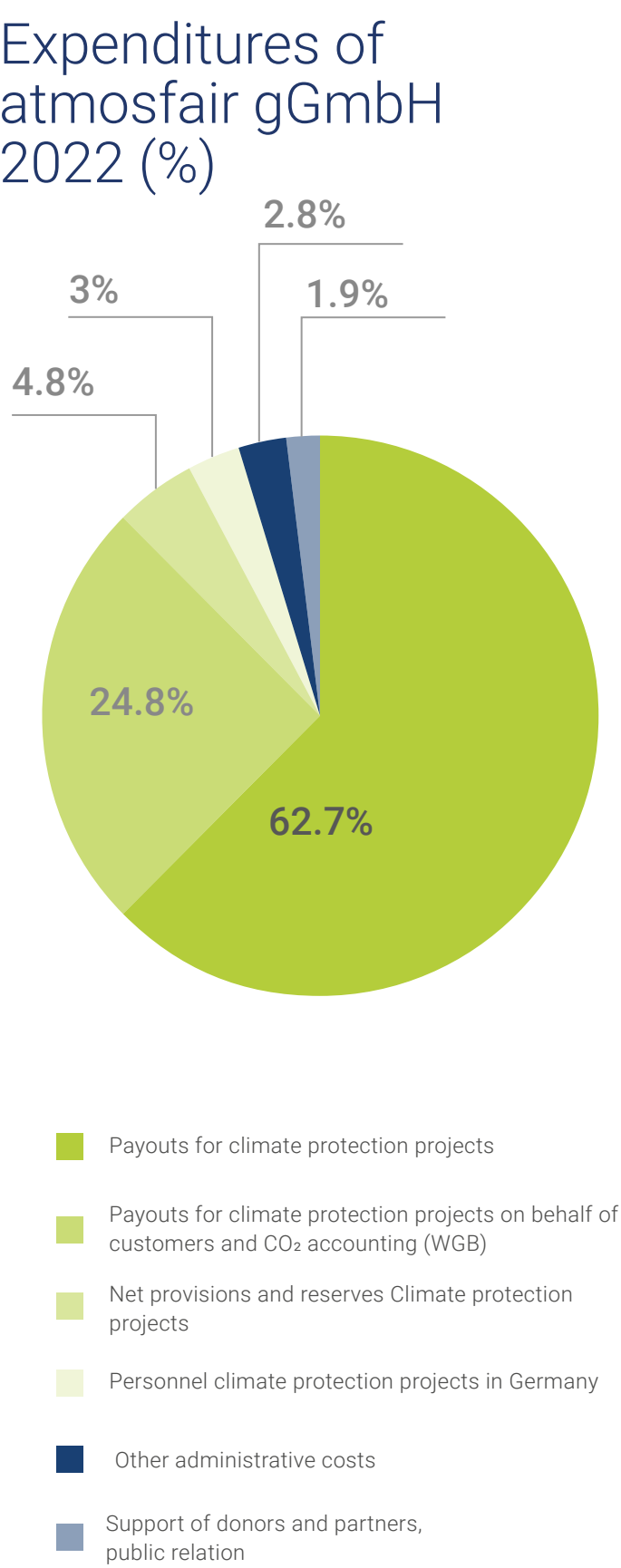
Including the emissions reductions certified in 2022, atmosfair has achieved more CO₂ reductions in its climate projects between 2005 and 2022, i.e. since atmosfair was formed, than the reduction obligations resulting from voluntary contributions to climate change mitigation and customer contracts - a surplus of a good 1.26 million tonnes of carbon emissions (see table). This means that atmosfair has exceeded its commitments to all customers and donors and has built up a buffer for the year 2023.

Review and discharge of company management

In accordance with the Articles of Association, the 2022 financial statements were audited by an auditor appointed by the Supervisory Board. The auditor confirmed the annual financial statements, raised no objections and, as in previous years, issued an unqualified audit opinion. The Supervisory Board determined that the annual report had been properly completed on 25 May 2022 and discharged the company management.

2022 income statement

	2022	2022	2021
Income	EUR	%	EUR
Voluntary climate contributions for climate projects	20,497.538	70.05	16,257.277
Climate projects on behalf of customers, CO ₂ accounting software, consulting, etc., before taxes (business activities)	8,763.621	29.91	4,610.888
Other income (interest. etc.)	10,738	0.04	2,500
Total	29,261.197	100.0	20,870.665
Expenses			
A Climate projects for carbon offsetting, private and corporate customers			
Direct expenditures (planning, setup, operation, technology purchases, audits, staff in developing countries)	-18,336.408	62.7	-18,366.703
Net creation/release of provisions and reserves	1,414.957	4.8	-212,412
Total climate protection projects CO₂ compensation	-19,751.365	67.5	-18,579.115
Personnel: Project planning and support by atmosfair employees in Germany and in the project countries	-867,972	3.0	-820,191
B Administrative costs: support for donors and partners, fundraising, PR work			
Personnel costs	-541,796	1.9	-521,939
PR editorial team	-10,550	0.04	-113,461
Total	-552,346	1.9	-635,400
C Other administrative costs			
Office administration (telecommunications, postage, office supplies, insurance, membership fees, depreciation)	-101,664	0.3	-59,028
Rent and maintenance	-311,091	1.1	-87,967
Credit card fees, payment services, account fees, exchange rate differences	-141,673	0.5	-83,615
IT (fees, maintenance costs, server rental fees)	-18,392	0.1	-19,898
Accounting, tax advisory services, financial statements, financial auditors	-155,106	0.5	-93,579
Printing costs for publications	-7,581	0.03	-9,498
Contracts for work and services	-83,217	0.3	-60,346
Travel expenses	-10,776	0.04	-2,616
Non-deductible taxes	0	0	-25,216
Total	-829,500	2.8	-441,763
D Business activities: climate service for companies			
Expenditures for climate projects on behalf of customers	-6,572,200	22.5	-3,357.318
CO ₂ accounting software	-9,196	0.03	-9,949
Staff: climate service for companies	-157,813	0.5	-149,126
Taxes on income from climate service and climate projects for corporate customers	-520,805	1.8	-235,122
Total	-7,260.014	24.8	-394,196
E For informational purposes: use of surpluses			
Surpluses from 2021 business activities, after tax	1,641.059	7.7	759,778
Total	-29,261.197	100.00	-20,870.665
Results after release of reserves for climate projects and use of surpluses	0		0



References

Corporate partners

50Hertz
 Ableton AG
 AbVie Deutschland GmbH und Co. KG
 ACTED
 Aldi Nord
 Aldi Süd
 Amex GBT
 ARS Altmann
 BAHAG AG
 Bayerische Landesbank
 BayWa r.e. renewable energy GmbH
 BMW AG/Group
 BÜFA GmbH & Co. KG
 Carlson Wagonlit Travel
 Chiesi GmbH
 DB Cargo AG
 Deloitte
 Deutsche Bahn AG
 Deutsches Zentrum für Luft- und Raumfahrt
 e.V.
 DHL Dolby Germany GmbH
 DFL Deutsche Fußball Liga GmbH
 Deutsche Kreditbank (DKB)
 FlixBus
 FTI Consulting
 Gebr. Lotter KG
 Hermes Germany GmbH
 HRG Sports
 idealo internet GmbH
 KAYAK
 KfW Bankengruppe
 Klöckner & Co. SE

Knorr Bremse AG
 Landesbank Hessen-Thüringen
 Lufthansa AirPlus Servicekarten GmbH
 Mercedes-Benz AG
 Merck Serono GmbH
 MTU Aero Engines
 Otto Group
 Pfinder KG
 QVC Deutschland
 Schachinger Immobilien und Dienstleistungen
 GmbH & Co. KG
 Schenker AB
 Schülke & Mayr GmbH
 SICK AG
 Siemens AG
 Teva Health GmbH
 Toll Collect
 Travelpool Europe
 UNITO Versand & Dienstleistungen GmbH
 Vector Informatik GmbH
 Vodafone GmbH
 VW Volkswagen AG
 WALA Heilmittel GmbH
 wpd AG
 W&W Service GmbH

NGOs, political and academic institutions, associations

Alexander von Humboldt Stiftung
 Alfred Wegener Institut
 Berliner Energieagentur GmbH
 Bundesverband Solarwirtschaft e. V.

Deutsche Bundesregierung
 École Fédérale de Lausanne
 ETH Zürich
 Referenzen
 European Green Party
 Fraunhofer Gesellschaft
 German Doctors e.V.
 Greenpeace e.V.
 Global Innovation Fund
 Harvard University
 Landeshauptstadt Düsseldorf
 Landeshauptstadt München
 Lions Clubs International
 Öko-Institut e. V.
 Stadt Hamburg
 Stiftung Entwicklungs-Zusammenarbeit
 Universität Basel
 Universität Bern
 Université de Genève
 Universität Zürich

Events

AMATA Management GmbH
 Deutsche Hospitality
 Die Toten Hosen
 Fachagentur Nachwachsende Rohstoffe
 FKP Scorpio Konzertproduktionen GmbH
 ITB
 Leipzig Tourismus Marketing GmbH
 Tollwood

Umweltforum Berlin

Tourism

AER Ticket
 Aldi Suisse
 Contrastravel
 DAV Summit Club GmbH
 Durchblick Leserreisen
 Forum Anders Reisen
 Frosch Sportreisen
 Hauser Exkursionen
 Hofer
 Laade Gartenreisen
 Neue Wege Reisen
 Papaya Tours GmbH
 RTK Reisebürokooperation
 Schauinsland Reisen
 Weltweitwandern
 World Insight

Awards

The Team



atmosfair emerged as the test winner from all twelve international comparative studies. All studies evaluating offset schemes based on various criteria since 2005, the year atmosfair was formed, are presented in our test winner brochure, which you can download from our website (https://www.atmosfair.de/de/ueber_uns/andere_ueber_uns/atmosfair_im_test/)

Below are the last two tests.

atmosfair getestet von
Stiftung Warentest
Finanztest Heft 11/2022

Stiftung Warentest
(Finanztest, issue 11/2022)

“Carbon offsetting – with these schemes you can help tackle climate change: a comparison”

The Stiftung Warentest finance test looked at four schemes that offer voluntary carbon offsetting. Between June and September 2022, questionnaires were sent and the scheme websites analysed. The quality of offsetting, transparency, management and control were analysed along with the principle of avoid first, reduce second. The main differences are in the quality of offsetting.

atmosfair was fully convincing and as the test winner was the only scheme to receive the overall “very good” rating – total score (0.5) in the comparison and the top rating for “quality of offsetting”.

You can find the complete article here in German (download subject to a fee of €1.00): <https://www.test.de/>

[CO₂-Kompensation-Diese-Anbieter-tun-am-meisten-fuer-den-Klimaschutz-5282502-0/](https://www.test.de/CO2-Kompensation-Diese-Anbieter-tun-am-meisten-fuer-den-Klimaschutz-5282502-0/)

Test results:

Overall score: **0.5 (very good)**
Quality of offsetting: **0.5 (very good)**
Transparency: **0.5 (very good)**
Management & Control: **0.5 (very good)**
Principle of avoid first, reduce second and offset last: **0.5 (very good)**
Quote from the testers’ report: **“Compared to the last study, the quality of offsetting has declined for three of the four schemes. Only atmosfair was fully convincing.”**

atmosfair getestet von
Stiftung Warentest
Finanztest Heft 3/2018

Stiftung Warentest
(Finanztest, issue 3/2018)

“Above the clouds” – A comparison of carbon offset schemes

In the magazine “Finanztest” 3/2018, Stiftung Warentest compared organisations that offer voluntary carbon offsetting schemes. The test criteria included “Quality of offsetting” and “Transparency”.

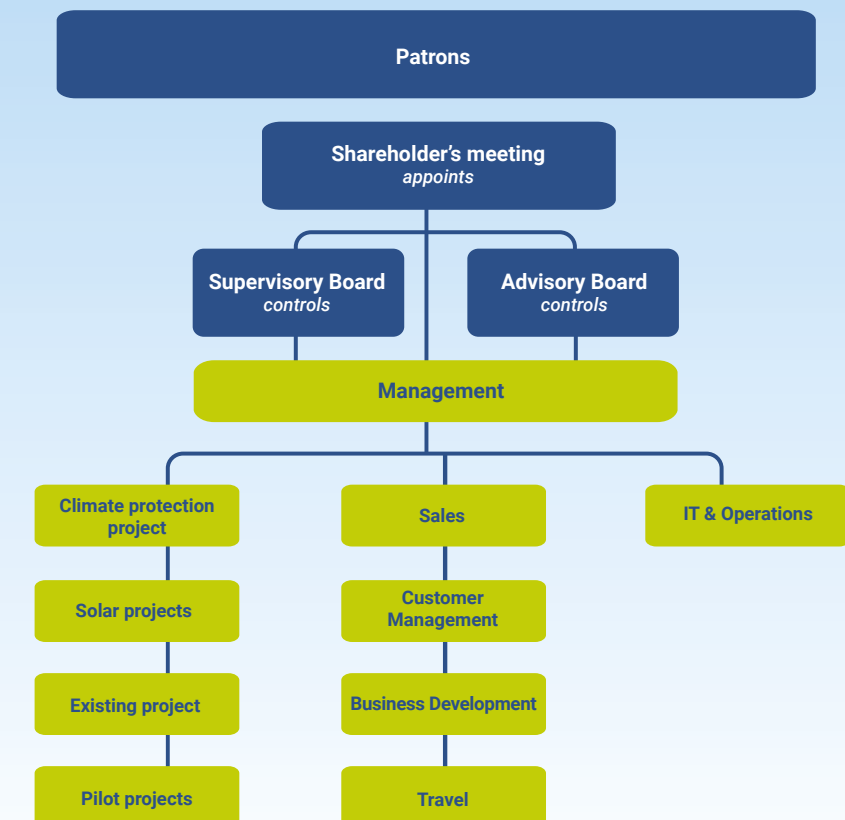
The criterion “Quality of offsetting” was mainly used to evaluate the standards of the climate projects that lower carbon emissions. Participation in project development was also part of this criterion.

For the criterion “Transparency”, it was important, among other things, whether the organisation disclosed its finances and provided information on expenditures for administration and advertising as well as on the use of project funds in the individual projects.

You can find the complete article here in German (download subject to a fee of €1.00): [https://www.test.de/CO₂-Kompensation-Diese-Anbieter-tun-am-meisten-fuer-den-Klimaschutz-5282502-0/](https://www.test.de/CO2-Kompensation-Diese-Anbieter-tun-am-meisten-fuer-den-Klimaschutz-5282502-0/)

Test results:

Overall score: **0.6 (very good)**
Quality of offsetting: **Very good**
Transparency: **Very good**
Quote from the testers’ report: **“Test winner”**



Patrons	Shareholder's meeting	Advisory Board	Supervisory Board	Management
Professor Dr. Klaus Töpfer	Stiftung Zukunftsfähigkeit / Klaus Milke	Klaus Milke (Chairman without voting rights)	Dr. Harry Lehmann (Chairman)	Dr. Dietrich Brockhagen
Professor Dr. Mojib Latif	Dr. Dietrich Brockhagen	Malin Ahlberg	Yvonne Wende	Steffen Pohlmann
Professor Dr. Hartmut Graßl		Christoph Bals	Dr. Christoph Mecking	
		Prof. Dr. Regina Betz		
		Prof. Dr. Barbara Praetorius		
		Luisa Rölke		
		Dr. iur. Annette Windmeisser		

"My discipline is actually known to be a beautiful natural type of sport. In my imagination, I am paddling on clear wild rivers surrounded by beautiful scenery. But reality is very different: The few wild rivers I still canoe on are increasingly running out of water. That's why I'm often on trips to train at artificial whitewater facilities powered by pumps. The impacts of climate change therefore also affect my sport and at the same time I am also part of the problem. That's why I try to keep my carbon footprint as small as possible when I travel."

Franz Anton

Franz Anton is one of the most successful German slalom canoeists in his main discipline, the men's single canoe. The two-time world champion and three-time European champion also pays attention to his carbon footprint when practising his sport. In 2024 at the Olympic Games, he will try to win an Olympic medal, which he is still missing.

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atmosfair

