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atmosfair

Annual Report 2025

Topics

Negative emissions – positive for the climate and for people

Breathe easier thanks to efficient stoves

New frontiers in energy: Biogas in Colombia

Kenya: clean transport with electric tuk-tuk taxis

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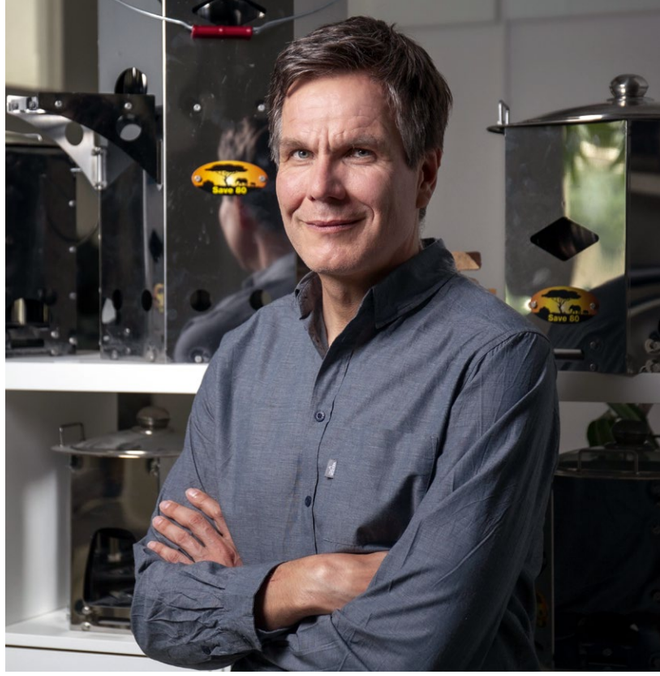
Editorial



Dear Readers

The blockade of the Strait of Hormuz in March 2026 clearly demonstrates once again that our dependence on fossil fuels is dangerous, not just for the climate but also for the economy and consumers. Tankers are stuck in port, preventing around a quarter of global seaborne oil shipments from reaching their destinations. The consequences didn't take long to materialise: while rising petrol prices are encouraging people to switch to electric vehicles, the blockade is also affecting fertilisers, sea freight and the global economy. Our dependence on oil has once again been exposed.

The irony is that just three days before the outbreak of war, the German government again approved the installation of new oil and gas heating systems after the previous government had banned their installation in most cases – despite the geopolitical risks. This fits into the broader picture of a major rollback of climate policy in Western countries. The European Union is weakening the phase-out of internal combustion engines and delaying the emissions trading system for buildings and transport, while US President Trump is withdrawing from climate diplomacy and disparaging climate NGOs.

atmosfair wins court case against Die WELT
Even some established media outlets are fuelling public sentiment against climate organisations. In December 2025, the German newspaper Die WELT published an article entitled "How Hamburg bought stoves in Nigeria that didn't exist". In addition to its misleading headline, the article contained a series of false claims about our efficient stoves in the West African country. We challenged these claims and won our case in the Berlin Regional Court: In February 2026, publishing house Axel Springer was required to permanently retract all false statements, including the headline, and to publish our counter-statement.

The Save 80 efficient stoves featured in the WELT article not only reduce firewood use by 80%, thereby protecting forests and cutting CO_2 emissions. They also produce much less smoke and fewer toxic substances during cooking, reducing harm to the respiratory health of the women preparing the food. Evidence of this positive effect on health was provided last year by a scientific study published in the journal Scientific Reports, part of the Nature Portfolio.

Negative emissions
In 2025, we launched several projects to remove the greenhouse gas CO_2 directly from the atmosphere and store it permanently. It ranges from technologies developed by the ancient Incas to the latest high-tech innovations. We are still in the trial phase, although, together with our partners, we have already permanently removed and stored more than 10,000 tonnes of CO_2 from the atmosphere. This will not be the main focus of atmosfair's work in future; the energy transition and the expansion of renewable energy in developing countries remain our greatest and most pressing challenge. However, as the Intergovernmental Panel on Climate Change has determined (see the CDR focus section in this annual report), we cannot achieve our long-term goals without this direct carbon dioxide removal (CDR).

We would like to extend our heartfelt thanks to all our supporters who, in 2025 – despite the rollback in climate policy – have continued to advocate for greater climate action and support atmosfair.

Yours sincerely,

Dr Dietrich Brockhagen
CEO atmosfair gGmbH

Sun and Water

Solar energy and water provide climate-friendly electricity. Together with our partners, we construct new facilities in rural areas to supply local populations with energy and clean drinking water. Our irrigation systems for agriculture also run on renewable energy.

Efficient Stoves

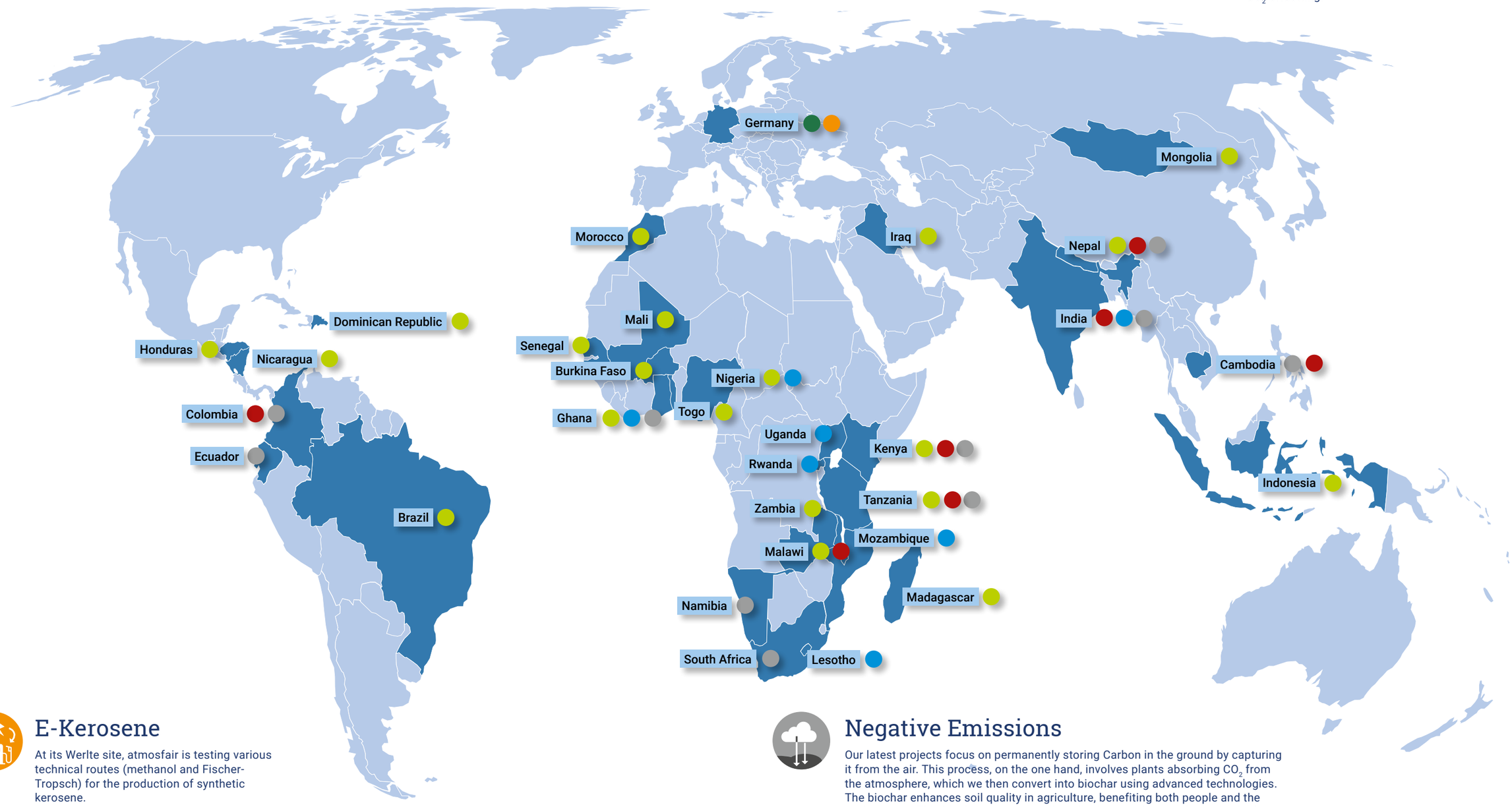
In Africa and Asia, atmosfair produces energy-efficient stoves at material cost. These stoves are made from stainless steel and create jobs in local communities. Families using these stoves require 90% less wood for cooking, protecting forests and saving money.

Biogas & Biomass

atmosfair's partners install small biogas systems for farms, transforming cow dung or pig manure into biogas for cooking, lighting, and fertilizer. Additionally, we support electricity generation from agricultural residues in dedicated facilities and repurpose organic waste.

Environmental Education

Climate protection begins at home. That's why atmosfair supports educational projects for students in schools across Germany to foster awareness of active climate protection. However, we do not count these initiatives toward CO_2 offsetting.



E-Kerosene

At its Werlte site, atmosfair is testing various technical routes (methanol and Fischer-Tropsch) for the production of synthetic kerosene.

Negative Emissions

Our latest projects focus on permanently storing Carbon in the ground by capturing it from the air. This process, on the one hand, involves plants absorbing CO_2 from the atmosphere, which we then convert into biochar using advanced technologies. The biochar enhances soil quality in agriculture, benefiting both people and the environment. This biochar improves soil quality in agriculture and remains in the soil for hundreds of years. This benefits both people and the climate. The second technology we use is Direct Air Capture (DAC). In this process, we extract carbon dioxide from the atmosphere using capture devices and sequester it in rock.

Negative emissions – positive for the climate and for people

For the past 20 years, atmosfair has been developing renewable energy infrastructure in the Global South to reduce greenhouse gas emissions. According to the Intergovernmental Panel on Climate Change (IPCC), this alone will not be enough, so we are now taking things a step further: We support projects that remove carbon dioxide from the atmosphere and store it permanently. In the process, we develop new technologies with our partners or use centuries-old methods in innovative ways. We'll show you how this works here – and take you on a tour of our projects.

On the outskirts of the village of Tikpaan Gmafudo in northern Ghana, there is a flurry of activity, even though things are usually quiet during the dry season. Four women are pushing a more than two-metre-high machine, fitted with a large steel cylinder, over a pit filled with maize and millet straw. The machine is a small pyrolysis unit. It processes crop residues that would otherwise simply rot away or be burned, thereby benefiting the climate.

One of the women is Ama Grace. She takes a bundle of straw, sets it on fire and pushes it into one of the side openings. The women then keep adding more crop residues. The processes taking place inside the unit can't be seen, but the thermometer gives a clue as to what's happening: "700 degrees – just right for carbonisation. Bring more straw!" says Hadija Trignando, who is coordinating the work.

The small pyrolysis unit in Tikpaan Gmafudo is one of a total of 300 units that atmosfair developed together with its partner company, Carboneers, and is deploying in Ghanaian villages. In these units, the plant residues are heated to very high temperatures, but they do not burn because only very little oxygen is allowed to enter. The metal hoods ensure that pyrolysis takes place in a controlled and safe way compared to traditional, open charcoal pits. This also allows the methane produced during pyrolysis to be captured and burned safely Three hours later, the women pour water into the side openings of the unit and move it aside. All that remains in the pit is a grainy black substance: pure biochar, which the women put into bags.

Small pyrolysis units produce natural fertiliser

"We get 75 cedi for every bag we fill, and each pit contains enough to fill up to 10 bags. This way, we can earn money during the dry season when we can't harvest and sell grain," explains Ama Grace. 750 Ghanaian cedis is equivalent to 50 euros, roughly a quarter of the monthly per capita income in this West African country. Later in the day, Trignando and Grace will mix the biochar with compost to produce a natural fertiliser that also helps tackle climate change.

"My plants are finally getting enough nutrients to grow without me having to buy expensive synthetic fertiliser. And the biochar helps keep water right at the roots," says Ama Grace. It is immediately obvious that the harvest on the field regularly fertilised with biochar is much better: the amaranth is growing faster than ever before here in Tikpaan Gmafudo.

Biochar has a porous structure, giving it a very large surface area: up to 800 square metres per gramme, which is roughly the size of a tennis court.

In Ghana, farmers turn crop residues into biochar. To do this, they use small pyrolysis units provided by atmosfair.

How can CO_2 be removed from the atmosphere?

The following approaches for carbon removals exist today:

Technical solutions (used by atmosfair)

- **Pyrogenic Carbon Capture and Storage (PyCCS)**
  Pyrolysis turns solid biomass into biochar, which stores the biomass's carbon in the soil when the biochar is used in farming.
- **Bioenergy with Carbon Capture and Storage** (BECCS): energy is generated from biomass, while the carbon dioxide released in the process is captured and stored.
- **Enhanced Weathering**
  rock powder spread across fields reacts with CO_2 and permanently binds it in the form of carbonates.
- **Direct Air Capture and Storage (DACS)**
  CO_2 is removed directly from the air using technical processes, usually involving chemical adsorbents and changes in temperature or pressure. The CO_2 is then liquefied and injected into deep rock formations

Nature-based solutions (not used by atmosfair)

- **Reforestation**
  newly planted trees absorb carbon dioxide from the atmosphere as they grow and store the carbon in their biomass
- **Forest conservation**
  Trees in existing forests are protected from deforestation and pest infestation, so that the carbon already stored does not escape if the trees are cut down prematurely or die
- **Peatland restoration**
  he water table prevents peat from oxidising and emitting CO_2 – the restored peatland acts as a carbon sink

The women mix biochar with compost or manure to make fertiliser.

The pores absorb both nutrients and water. When spread on farmland, biochar therefore increases crop yields. This is extremely important, as heavy rainfall and intensive agricultural use have depleted many soils in Ghana.

At the same time, biochar benefits the climate: thanks to its stable structure, the carbon remains in the soil for centuries. The biochar produced by all 300 small pyrolysis units can permanently store the carbon equivalent of 13,000 tonnes of CO_2 every year. The plants used to produce the biochar later absorb this greenhouse gas from the atmosphere as they grow. This is equivalent to the CO_2 emissions from around 10,000 medium- and long-haul flights.

Meeting the 1.5-degree target through carbon removal – without forest conservation projects

Removing carbon dioxide from the atmosphere – known as carbon dioxide removal (CDR) – is essential to meeting the 1.5-degree target in the long term. In all likelihood, humanity will initially exceed this threshold. However, it will then be all the more important to bring the global average temperature back below the 1.5-degree threshold to avert long-term, significant damage to nature and people. Biochar is just one of several ways to permanently remove CO_2 from the atmosphere (see box). atmosfair uses several of these technologies, but is not involved in forest conservation and reforestation, as there is no guarantee that the CO_2 will remain permanently sequestered in these projects.

Industrial pyrolysis of shrubwood cuttings

Back to biochar – and 3,000 kilometres further south to Namibia: This is where atmosfair produces biochar on an industrial scale. Together with our partner company PyroNam, we operate a pyrolysis plant with four large processing vessels on the Nog Verder Farm, located in the heart of the vast savannah landscape. The raw material here is shrubwood cuttings, which are produced when scrub is cleared. Over the past few decades, much of Namibia's savannah has become overgrown with this scrub. Around 45 million hectares are affected – more than half the country's land area. As a result, there is less grass available as food for wildlife and grazing animals. The thorny bushes prevent them from reaching the last remaining grassy areas. In addition, areas completely overgrown with scrub are home to significantly fewer species than savannahs with grassland and only some scrub.

"Every batch of biochar we produce starts with systematic scrub thinning. It's physically demanding work, as we often work in temperatures of over 35 degrees. However, our work paves the way for restoring the savannas and mitigating climate change," says Jeremy Keister, who manages operations here.

Sustainable forestry at the foot of Cotopaxi

Our next stop is Latin America, in northern Ecuador at the foot of the Cotopaxi volcano. Here, we use wood residues from sustainable forestry. We partner with Nina Energy and our primary supplier is the timber producer Aglomerados Cotopaxi. When wood is harvested, large quantities of small branches are always left behind on the ground; until now, the timber industry has had no use for them. We launched a pilot project with the aim of producing around 300 tonnes of biochar each year from roughly 900 tonnes of wood residues. Part of the area is a nature reserve and is not used for timber production. Together with a local university, Aglomerados Cotopaxi monitors the development of biodiversity here.

In this plant, atmosfair, in collaboration with PyroNam, converts shrub cuttings into biochar.

In the East African Rift Valley, we use geothermal electricity to remove CO_2 directly from the atmosphere.

We only use raw materials that are both environmentally and socially compatible to produce biochar. Wood from illegal logging is a no-go; we also do not accept wood residues from monocultures that consume large volumes of groundwater. We apply environmental and social criteria to crop residues and

How pyrolysis works

1. **Biomass** from residues are heated in a pyrolysis chamber to temperatures of **500 to 900 degrees Celsius**. The chamber is sealed off from the surrounding air. This keeps oxygen out of the chamber, preventing the carbon from oxidising.
2. At these high temperatures, the long chains of cellulose molecules break down into shorter compounds. This produces **various solid, liquid and gaseous substances**. The composition of these substances depends on both the temperature and the duration of the pyrolysis.
3. One of the main gases released from the biomass is **methane**, which is flammable and can be used as an energy source for the entire pyrolysis process.
4. This leaves behind **biochar**, which is comprised of a stable carbon matrix. It also contains small amounts of oxygen and hydrogen atoms, as well as ash, which is rich in minerals.

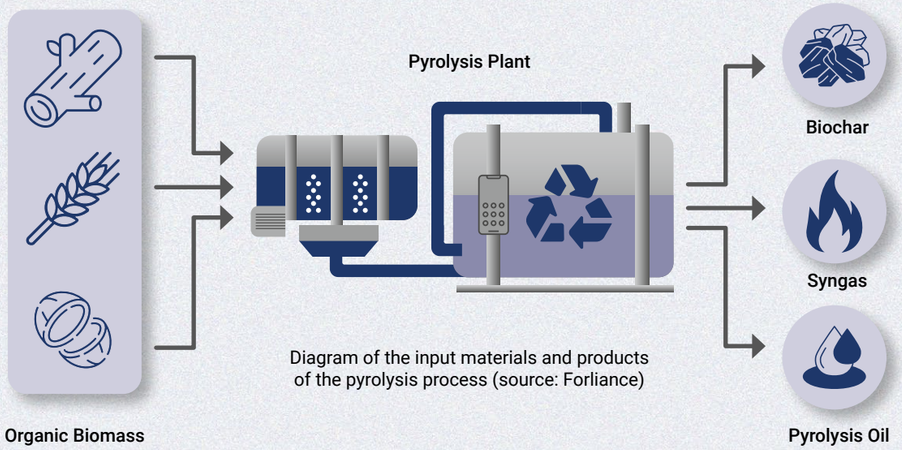


Diagram of the input materials and products of the pyrolysis process (source: Forliance)

do not accept residues from energy crops, as their cultivation competes with food production. Residues from the production of cash crops such as cocoa or coffee is only permitted if smallholder farmers do not become economically dependent as a result..

Enhanced weathering using rock powder

Biochar from plant residues has one key drawback: the total amount of plant residues available for biochar production is limited; this method would only sequester the equivalent of around 15 % of global CO_2 emissions in the soil. It's a good start, especially because cropland also benefits from biochar. But it needs to be complemented by other technologies. We are currently testing a promising approach in South Africa: enhanced weathering.

Every year, natural weathering removes one billion tonnes of carbon dioxide from the atmosphere. When it rains, rainwater absorbs CO_2 from the air and forms carbonic acid. This reacts with rock, producing bicarbonates containing carbon. These bicarbonates are carried by rivers into the ocean, where they remain for hundreds to thousands of years.

Natural weathering processes are slow. However, when rock is ground into a fine powder, its surface area increases, allowing it to weather much more quickly. Together with the South African company AquaGel, we are investigating how effectively enhanced weathering can sequester CO_2. To this end, we are enriching the biochar-based fertiliser – which AquaGel produces from biochar – with locally sourced rock powder. This powder not only delivers negative emissions, but its minerals also increase soil fertility.

Direct air capture in the East African Rift Valley

The final stop on our journey is East Africa. Here, we are working on the most technologically advanced approach to CO_2 removal: direct air capture (DAC). Although CO_2 is the most important greenhouse gas driving climate change, it occurs in the atmosphere only in very low concentrations. Its molecules account for just 0.04 % of the air. This makes the process of using technology to remove CO_2 from the atmosphere very complex. The amount of energy needed is often considered too high. Where there is a sufficient supply of renewable energy and where the captured CO_2 can be easily stored, the use of DAC may still be advantageous. This is the case, for example, in Iceland or in the East African Rift Valley, where atmosfair has built a DAC plant in collaboration with Octavia Carbon in 2025. Here, easily accessible layers of volcanic basalt are highly effective at storing CO_2.

Electricity generated from geothermal energy powers our four DAC modules, which we have installed in a large container at Lake Elmenteita in Kenya.

Large parts of Namibia's savannah are overgrown with scrub, which is bad for both livestock farming and biodiversity. That is why these men on the Nog Verder Farm thin out the scrub

How direct air capture works: the temperature swing process

1. Each DAC module has its own fan that draws in ambient air and channels it through the capture unit. The temperature and air pressure within these devices can be adjusted.
2. When temperatures are low and pressure is high, CO_2 molecules bind to a liquid adsorbent. The remaining air simply continues to flow.
3. The operators then stop the air supply, creating a vacuum. At the same time, they increase the temperature so that the CO_2 molecules are released from the material once again and separated from the air.
4. The operators then lower the temperature and increase the pressure, restarting the process all over again – much like a swing, which is where the process gets its name: temperature swing.
5. The captured carbon dioxide can then be liquefied and permanently stored as carbonate in basalt.

They capture CO_2, which is then liquefied and injected deep into the ground at the same location. In the process, the carbon mineralises and remains permanently sequestered in the basalt. Octavia Carbon plans to expand the entire DAC plant to a capacity of 1,000 tonnes of CO_2 per year by 2026.

Outlook: an essential element of long-term climate change mitigation

Whether high-tech or a millennia-old Inca tradition: negative emissions are essential for achieving the 1.5 C target in the long term. For now, however, the priority is to reduce global CO_2 emissions as much as possible. We can achieve this by expanding renewable energy and promoting climate-friendly technologies such as efficient stoves and biogas plants. At the same time, however, we must start building biochar production facilities and DAC plants today so that these technologies are available on a large scale from 2040 onwards. By then, we will urgently need them to offset unavoidable residual emissions and remove CO_2 from the atmosphere. People in the Global South are already benefiting, as biochar and rock powder make their fields more fertile.

How much biochar can be produced worldwide?

Together with the ifeu – Institute for Energy and Environmental Research, atmosfair looked at the quantities of biomass from residues available in countries of the Global South that are also environmentally and socially compatible. This study therefore goes beyond previous research. With a total of 418 million tonnes of residues, pyrolysis could produce 125 million tonnes of biochar, which has the potential to permanently store 350 million tonnes of CO_2 in the soil. This is roughly equivalent to one third of the CO_2 emissions from global air travel.

Most of this comes from agricultural residues, primarily rice straw and husks, which account for almost 100 million tonnes. Another 120 million tonnes are produced when wood is harvested and processed

You can find the complete study here

Our Standard

Established in 2004 as part of a research project by the German Federal Ministry for the Environment, atmosfair has developed stringent standards for voluntary carbon offsetting. These standards serve as benchmarks for the evolving carbon offsetting market. atmosfair has been recognized in numerous international benchmark studies for its leadership in this field.

Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety

Approach

Standards

- Carbon offsetting is a secondary choice; avoiding CO_2 emissions is always preferable
- Climate protection takes priority over maximizing donations
- Raising awareness is a key component, as it leads to long-term CO_2 avoidance
- We collaborate with business travel specialists to optimize travel and promote alternatives like video conferencing

Implementation

- We do not partner with organisations that fail to meet atmosfair standards, such as proper CO_2 emission calculations, even if it could bring financial benefits
- We do not offer carbon offsets for activities that have simpler, more effective alternatives for reducing CO_2 emissions, such as private car use or power consumption
- We conduct independent calculations to accurately represent climate impact

Climate protection projects

Standards

- Permanent CO_2 reduction
- Additionality
- Support for technology transfer between the Global North and South
- Direct assistance to local communities
- Contribution to local environmental protection
- Involvement of project communities in technology selection
- Alignment with development policy goals

Implementation

- All projects must meet two key standards: CDM/PACM (Paris Agreement Crediting Mechanism) of the UN and „Gold Standard" (environmental NGOs), with up to 10% savings through Gold Standard Microscale
- CDM/PACM + Gold Standard + X: Compliance with additional atmosfair criteria, such as the carbon quota (minimum share of atmosfair funding in project costs) to ensure additionality, and exclusion of non-beneficial or high-risk projects like forest projects
- CO_2 reduction calculations and monitoring are conducted according to UN standards
- Qualified, UN-approved auditors (e.g., TÜV) are responsible for oversight and held accountable for errors.
- All test reports are published on the UN Climate Secretariat's website
- Project planning and development are managed by atmosfair, in collaboration with experienced partners in developing countries

TÜV SÜD · Gold Standard – Climate Security & Sustainable Development · United Nations Framework Convention on Climate Change

CO_2 calculation

Standards

- Comprehensive
- Scientifically rigorous
- Well-documented
- Certified

Implementation

- We account for all climate effects of air travel, including condensation trails and ozone formation, following IPCC guidelines, which significantly increase the calculated climate impact compared to CO_2 alone
- Our emissions calculator is custom-built and certified by the Federal Environmental Protection Agency (Umweltbundesamt)
- All data sources and methodologies are documented and made available on the atmosfair website

IPCC – Intergovernmental Panel on Climate Change · Umwelt Bundesamt

Organisation and finance

Standards

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

Implementation

- Administrative costs are kept low, with over 90% of all donations directed towards climate protection projects in the Global South, including planning, construction, and operation
- Donations are tax-deductible and regulated by the tax office
- We maintain a demanding legal status as a non-profit (gGmbH), with full disclosure in the trade register
- Our advisory board includes high-ranking patrons and environmental experts from the Federal Ministry for Economic Affairs and Climate Protection, non-governmental organizations, and the scientific community

Construction workers are lining the biogas plant pit with concrete.

New frontiers in energy

Biogas in Colombia

A pilot project is taking shape: a biogas plant is being built in Colombia that turns urban and agricultural waste into energy while creating value without harming the climate.

It is 7:30 am in Buga, about an hour north of Cali in Colombia: Tobias Hanke has already been up for a while. He has already dropped his children off at school. He continues through the town, which is surrounded by mountains, to the grounds of SENA, a state-run vocational school specialising in agriculture on the outskirts of Buga. The guards at the gate greet him warmly, as everyone is well aware of his dedication.

On the SENA site and in close collaboration with the school, Hanke is working on a project near and dear to his heart: the experienced engineer is building a biogas plant here with his company, Hanke S.A.S., and with funding from atmosfair. Hanke has already planned and implemented projects in Germany and Africa; he has been living in Buga for twelve years. After a short drive, he arrives at the construction site. His team is already busy assembling long, yellow sealing strips. These men in white shirts come from the village next door.

One look at the construction site makes it immediately clear that this biogas plant differs fundamentally from the round plants commonly found in Germany. It is based on a rectangular pit approximately 50 metres long and ten metres wide. Hanke specifically designed the plant to be particularly robust and low-maintenance: "Special spare parts or technical support are almost impossible to get in Colombia because biogas is still a relatively new technology here. That is why I designed the plant so that it does not require a complex mechanical agitator. Instead, the biogas produced is fed back into the liquid biomass, where it provides the necessary agitation."

Furthermore, Hanke has adapted the design to the local climate and the available biomass. Whereas heating or insulation is essential for biogas plants in Germany, neither is required in Colombia. Juan Pablo Llano Castaño, an employee of the regional environmental authority CVC, describes this as the "tropicalisation" of European technology.

The authority has drawn up the environmental assessment for the biogas plant, which confirms that it may be built in accordance with local regulations. The CVC also monitors the proper disposal of biomass in the region. Smaller farms in particular have difficulty disposing of their waste properly, as they often lack the financial resources to do so. When stored in open pits, animal manure releases methane into the atmosphere. Juan Pablo therefore sees processing the manure in a biogas plant as a compelling solution.

The biogas project not only helps to reduce agricultural greenhouse gas emissions but also cuts down on urban sources of methane. Right now, the town of Buga's waste is disposed of at a landfill site. Deep inside the landfill, methane is also produced in the absence of oxygen and released into the atmosphere. Astrid Pulido is the sustainability officer at a local family-run supermarket chain. She reports that large quantities of organic waste from their stores end up at the landfill site every day – ideal "feed" for the biogas plant.

The biogas can be used to generate renewable electricity, while the digestate provides a high-quality organic fertiliser.

Once the plant is up and running, Hanke aims to process around 12 tonnes of organic waste every day. He uses the biogas to produce 2,000 kilowatt-hours of electricity a day, supplying the SENA training centre – where the plant is located – as well as a number of local households. Tobias Hanke is optimistic about the future: "Construction work is coming along well and we have already overcome many obstacles. We will also overcome the remaining bureaucratic hurdles." The pilot plant will be completed towards the end of 2026 and will gradually begin operations. It will prevent around 2,200 tonnes of CO_2-equivalent methane emissions from landfills and agriculture every year. At the same time, the biogas power plant will save around 300 tonnes of CO_2 by replacing fossil-fuel-based electricity generation. The total climate benefit is therefore 2,500 tonnes of CO_2 – equivalent to the average annual emissions of 250 people living in Germany. Three further plants are set to follow. In future, they will be able to process 145 tonnes of organic residues per day and produce enough electricity to supply SENA and around 1,500 households – a crucial first step towards establishing biogas plants in Colombia.

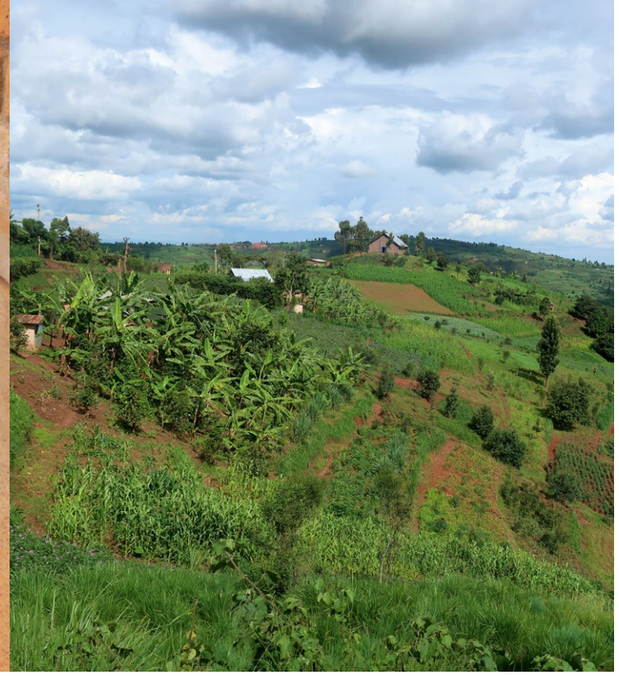
From right to left: Tobias Hanke, John Castillo (SENA) and the staff at Hanke are building a biogas plant that is the first of its kind in Colombia (see illustration). The membrane roof seals the pit airtight, allowing the biogas produced to be captured and used in a controlled way.

Biogas plant

In a biogas plant, microorganisms break down organic matter in the absence of oxygen. This process produces biogas – a mixture consisting mainly of methane and CO_2 – as well as digestate, which can be used as fertiliser. The gas is captured and prevented from escaping into the atmosphere. The energy-rich gas can be used, for example, to generate electricity in a combined heat and power plant or directly as cooking gas.

Methane: a greenhouse gas

Preventing methane emissions is a key aspect of biogas plants. Methane is a greenhouse gas with around 25 times the global warming potential of CO_2 over a 100-year period, and around 80 times the global warming potential over the first 20 years. Reducing methane emissions is therefore crucial not only for meeting long-term climate targets, but also as an extremely effective short-term measure to avoid significantly exceeding the 1.5-degree target.



Left: atmosfair's Save 80 stove uses just 20 % of the firewood previously needed for cooking – and emits significantly less smoke.

Centre: Rwanda's agricultural landscape: when farming families use less firewood, they help preserve the country's forests.

TROPOS

Traditional cooking fires in Rwanda consume large amounts of wood and produce toxic smoke.

Scientific study confirms the positive health effects of Save 80 stoves

Breathe easier thanks to efficient stoves

It is a rainy day in Musanze in northern Rwanda. Wafts of mist hang between the green hills as Angelique walks to the local market with a basket full of tomatoes and beans.

She sells her vegetables to supplement her family's income. With the money she earns, she buys unga, a cornmeal, which she will later use to cook ugali – a thick corn porridge that is served daily in many households. Cooking for the family is part of her daily routine and takes up a lot of time. But today is a special day: visitors from Germany have announced their arrival.

After Angelique has finished everything, she heads back home where she meets with Andrea Cuesta-Mosquera from the Leibniz Institute for Tropospheric Research (TROPOS). It's Cuesta-Mosquera's first of 40 visits, which were carefully planned and organised with the help of female community leaders from local agricultural cooperatives. While Angelique fetches water and gets the wood ready, Cuesta-Mosquera sets up her measuring equipment. She will measure the fine particulate matter produced during cooking when wood is burnt. Earlier, another team from the NGO Safer Rwanda, led by Dr Henning Kothe from Buana e. V., carried out a spirometry test to assess Angelique's lung function. During her health exam, Angelique also completed a questionnaire to assess the prevalence of respiratory symptoms. The aim is to find out whether the air quality and Angelique's health have improved since she stopped cooking on an open fire and started using an efficient Save 80 stove from atmosfair.

Six months before, Angelique decided to try out the new stove – a decision that was initially motivated by practical reasons. The Save 80 uses significantly less firewood, saving her both time and money as she no longer has to buy wood at the market or collect it herself in the forest. But after just a short time, she noticed other changes: there was less smoke in the kitchen, her eyes hardly ever burned, and she coughed less often. "I often used to struggle to breathe in the evenings," she explains. "It feels easier to breathe now." Cuesta-Mosquera now wants to confirm this subjective impression with scientific data.

1,000 participants in the study

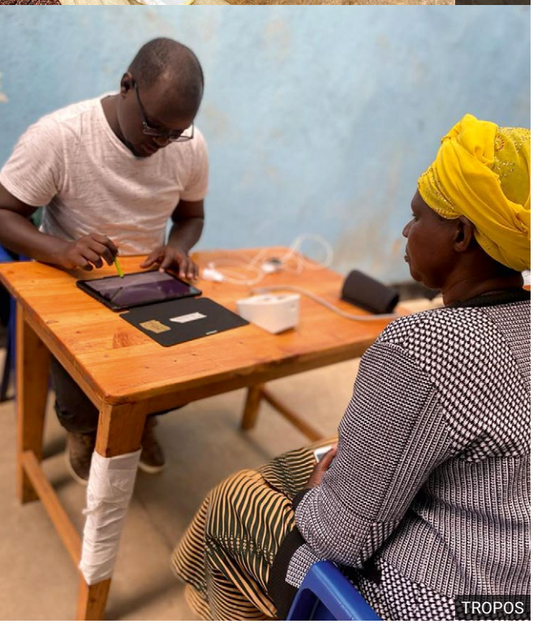
Angelique is one of over a thousand adults taking part in a three-year field study in rural areas of Rwanda. The study compares households using traditional cooking stoves with those using the Save 80 stove. The researchers are conducting two comprehensive assessments of the participants using health questionnaires, clinical tests and lung function measurements. At the same time, the research team is using portable monitoring devices to measure exposure to particulate matter (PM2.5), soot and polycyclic aromatic hydrocarbons.

The findings are clear: in households with efficient stoves, the concentration of particulate matter fell by an average of 77 %.

Save 80 in Rwanda

Thanks to its special design, the Save 80 stove reduces wood consumption by around 80% compared with traditional cooking methods. It therefore makes an important contribution to climate change mitigation: In 2024 alone, 150,000 stoves in Rwanda saved around 390,000 tonnes of CO_2. This is equivalent to the annual carbon footprint of a medium-sized German district town 50,000 inhabitants.

In cooperation with local businesses, atmosfair – a climate organisation – has long been committed to introducing efficient cooking technologies in sub-Saharan Africa. It operates its own production facilities and distribution networks in Nigeria and Rwanda, creating jobs in the process.



A member of staff at the TROPOS Institute prepares a rucksack used to measure air quality.

A questionnaire on respiratory symptoms is also part of the study into the health effects of the Save 80 stoves.

Soot levels decreased by up to 50 %, while brown carbon concentrations fell by as much as 78 %. These substances are considered particularly harmful to human health because they can penetrate deep into the lungs and contribute to chronic respiratory diseases.

The analysis yields clear results

The health data confirms these findings. People who use the Save 80 stoves report fewer respiratory symptoms such as persistent coughing, congestion and shortness of breath. Their lung function also improved over time. "Our findings underscore that clean cooking has a significant impact – particularly for women, who are traditionally responsible for cooking and therefore suffer most from this form of air pollution," explains Andrea Cuesta-Mosquera. For many participants, exposure to pollutants is highest while cooking.

The study thus highlights an often underestimated health risk. Worldwide, around 2.3 billion people use open fires or inefficient stoves for cooking. The resulting smoke contains high concentrations of particles that are harmful to health. According to international estimates, this indoor air pollution contributes significantly to respiratory diseases, cardiovascular problems and premature deaths – particularly among women and children who spend long periods near the cooking fires. "Air pollution is a silent killer in many low-income households," says Dr Henning Kothe of Buana e.V., who oversaw the health assessment for the project. "Its effects are insidious and long-lasting."

The benefits extend beyond health to include social and economic improvements. Because less wood is needed, women like Angelique spend less time collecting firewood and have more time to grow other crops, spend time with their children or take on odd jobs. Her story shows how technological innovations not only mitigate climate change but also improve people's quality of life.

Further information on the study

The study, entitled **"Health effects of better cookstoves: a long-term assessment"**, was carried out by TROPOS in collaboration with Buana e.V., supported by atmosfair and its local partner SaferRwanda. A total of 1,000 people took part in the study, 87 % of them women. The journal Nature Scientific Reports published the study in July 2025.

From advanced cook-stoves to zero-emission technology
News from our Projects

atmosfair supplies the Save 80 stove together with a matching pot and the Wonderbox, which keeps cooked food warm for hours and allows beans or rice to finish cooking without additional firewood.

Ghana, Tanzania, Mozambique

Save 80 stoves in three further countries

Our efficient Save 80 stoves were also introduced in Ghana, Tanzania and Mozambique in 2025. The Save 80 stoves reduce wood consumption and CO_2 emissions during cooking, while also minimising smoke and soot exposure for users.

We coordinate production and distribution for these new countries from our two existing sites: The factory in Kigali, Rwanda, manufactures Save 80 kits for Tanzania and Mozambique; the factory in Kano, Nigeria, supplies Ghana. This ensures consistent product quality and reliable supply chains. It also enables us to respond quickly to new market needs.

In Mozambique, our partner, the engineering firm StructCon, has successfully organised the import, final assembly and distribution, thereby bringing Save 80 stoves to households and communities in Niassa Province. In Tanzania, we have forged partnerships with the two non-governmental organisations TDFT and Shadao for this purpose. In Ghana, Beyond Karbon and NORDESO have begun distribution in the Northern Province and the Volta Region. We are therefore active in both rural and peri-urban areas. One important milestone was the official recognition of the Save 80 stove by Ghana's National Energy Commission. Following performance testing, the Commission awarded the stove five out of five stars for its energy efficiency.

In Togo, we are installing several agri-photovoltaic systems, whose solar panels generate climate-friendly electricity. Crops grow under them, protected by the panels from heavy rain and excessive sunlight.

Togo

Combining photovoltaics and agriculture

Together with the local project company SUNtec Togo Sarl, we commissioned the first three agri-photovoltaic plants in this West African country in 2025, combining solar power generation with agriculture.

In Dalavé, around 40 kilometres north of the capital Lomé, we installed a two-megawatt system together with our partner. Two one-megawatt systems were built in Kpessi and Adjegan; another two-megawatt system in Badougbe is currently under construction. At all the facilities, the solar modules are mounted on raised support structures, allowing crops to be grown beneath the panels. In addition, drip irrigation systems have been installed, ensuring efficient water use and significantly increasing the productivity of the dry soil.

Together, the four plants have a combined capacity of six megawatts-peak and will thus meet just under one percent of Togo's electricity demand. Unlike conventional solar parks, electricity generation does not compete with agriculture for land. At the same time, the panels protect crops such as tomatoes, lettuce and okra from both heavy rain and excessive sunlight.

Thanks to the photovoltaic system, the team at the Anavoha Health Centre can offer patients a full range of basic healthcare services. This is possible even at night and when it is cloudy because surplus electricity is stored in a battery.

atmosfair/Teva Germany

Madagascar

Solar power for six health centres

In south-western Madagascar, atmosfair has equipped six medical facilities with photovoltaic modules and battery storage systems.

This gives the rural centres access to electricity for the first time, enabling them to provide basic healthcare around the clock. In particular, doctors are able to deal much more effectively with night-time emergencies such as childbirth or accidents when electric lighting is available. Electricity also makes ultrasound scans and the refrigeration of medicines and vaccines possible. The communities are not connected to the national electricity grid. Local residents use the excess electricity to charge their mobile phones.

The solar panel installations at the six Centres de Santé de Base were funded by Teva Germany and eliminate the need for CO_2-intensive electricity from diesel generators. atmosfair works closely with the German non-governmental organisation Doctors for Madagascar to install these solar panels. The organisation supports more than 50 of these health centres in the south of the country. In 2024, 270,000 people sought treatment at these centres.

Kenya

Electric tuk-tuks transport people

In the Kenyan coastal town of Diani, south of Mombasa, 20 electric three-wheeled taxis are now in operation. Assembled and operated by our local project partner Sunny Tuk-Tuks, they travel around 150 kilometres a day without noise or exhaust emissions. Passengers love the tuk-tuks because they can talk during the ride. At the same time, their drivers earn more because electricity is cheaper than diesel.

atmosfair didn't just fund construction of the factory; it also installed more than 20 rapid-charging stations. The tuk-tuks can be charged there in just two hours, for example during the lunch break. If there isn't a station close by, the drivers can also plug their tuk-tuks into any normal plug, it just takes a bit longer to charge them. The vehicles have already made it as far as the border with Tanzania, 70 km away, on a single charge. The tuk-tuks are powered by electricity from the grid, which is up to 90 % renewable thanks to low-cost geothermal energy in the East African Rift Valley. But the drivers can also charge their taxis using excess electricity from solar-powered cooking systems that atmosfair installed in schools. The tuk-tuks, or auto-rickshaws as they are commonly known in India, are a popular means of transport, particularly along the Kenyan coast. These three-wheelers can transport up to three passengers at a top speed of 55 kilometres per hour, making them much more compact and less expensive than car taxis. They are used on regular routes or as shared and private taxis. The vehicles thus enable flexible local transport.

HUSK has successfully produced a high-yield fertiliser from rice husks. It improves the fertility of Cambodia's fields.

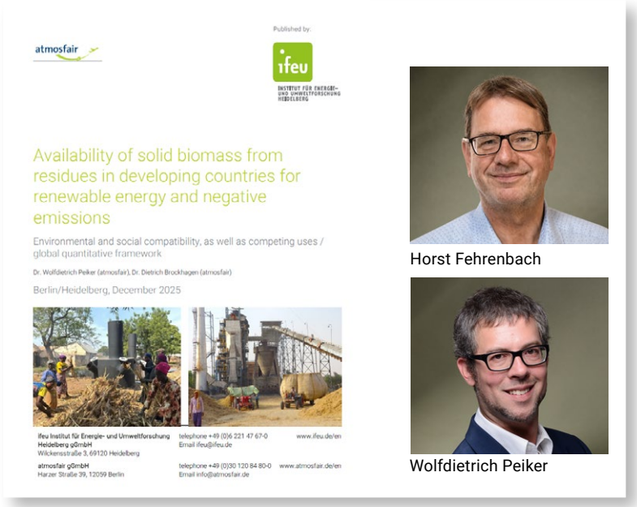
Cambodia

Rice husks now also used for biochar production

atmosfair and HUSK, the manufacturer and project developer, are building a pyrolysis plant in Cambodia that uses innovative technology to produce biochar from rice husks.

Rice is a staple in Cambodia, and every year two million tonnes of husks are produced there during threshing. Until now, they have been left to decompose as waste or burned. HUSK has recognised the enormous potential here and developed a method to convert the husks into biochar, despite their high silica content. HUSK adds nutrients during the pyrolysis process itself, producing tailor-made fertilisers for various crops and growth stages. This ensures that each plant species gets a blend of nutrients optimised for its specific needs.

In 2026, HUSK's third pyrolysis plant will come online, producing three tonnes of biochar every day from six tonnes of rice husks. The husks are collected from a rice mill next to the pyrolysis plant. HUSK aims to produce a total of 620 tonnes of biochar per year, which will permanently sequester 750 tonnes of CO_2 in the soil. The rice plants absorbed this greenhouse gas from the atmosphere while they grew. The amount of carbon dioxide sequestered every year is slightly more than the emissions from a single Boeing 747 flight from Frankfurt to New York. Furthermore, the organic soil improver replaces mineral fertilisers, whose production generates large quantities of greenhouse gases.



Horst Fehrenbach

Wolfdietrich Peiker

New study published

atmosfair and ifeu investigate the potential of biomass from residues

Around 400 million tonnes of solid organic waste are available in developing countries for climate applications, even when environmental and social compatibility requirements are met. atmosfair quantified this potential in a study conducted in collaboration with the ifeu Institute for Energy and Environmental Research.

Biomass from crop residues, forestry and wastewater treatment could be processed into 40 million tonnes of CO_2-neutral aviation fuel, with the potential to meet 20 % of the global aviation sector's needs. In biomass power stations, it would be possible to generate 645 terawatt-hours of electricity from these residues. Alternatively, the residues could be used to make biochar, which permanently sequesters 350 million tonnes of CO_2 in the soil.

This study is the first to use a top-down approach to derive criteria on availability and environmental and social compatibility from the Sustainable Development Goals (SDGs), before applying these criteria to different types of biomass using a bottom-up approach. The research drew on expert interviews conducted by the authors with partners from the agricultural sector, as well as external studies.

Examples of biomass that is not environmentally or socially compatible include residues from energy crops that compete with food crops for farmland. The study also considers waste from industrial agriculture – which involves the excessive use of pesticides or synthetic fertilisers – to be unsuitable, as well as waste biomass linked to human rights violations such as child labour. Furthermore, it must consist of "genuine waste" that is not used as animal feed or mulch. With these criteria, the atmosfair study goes much further than previous investigations into biomass potential.

Airline Index shows: First Class is harmful to the climate

The aviation industry continues to miss its own climate targets. This was shown by our atmosfair Airline Index 2025. The International Civil Aviation Organisation (ICAO) has required airlines to reduce CO_2 emissions per passenger-kilometre by two percent each year. In fact, emissions per passenger-kilometre fell by only 1.5 % annually between 2019 and 2024. As air travel has recovered, overall emissions are almost back to pre-pandemic levels.

A key reason for this is the seating configuration on aircraft. Per-passenger CO_2 emissions in first and business class are two to five times higher than in Economy Class. The premium segment accounts for more than 20 % of global CO_2 emissions from passenger air travel. The type of aircraft used also contributes to the high CO_2 emissions: no airline has a fleet dominated by new and efficient aircraft, such as the Boeing 737 MAX 8 or the Airbus A350.

German airlines and their subsidiaries are ranked in the middle of the Airline Index 2025. TUIfly performs best, scoring 76 out of a possible 100 CO_2 efficiency points. Lufthansa scored 60 efficiency points and SWISS just 54, mainly because of their high proportion of premium-class seats.

From Donation to Project

Expenditures for Climate Change Mitigation Reach Nearly EUR 19 Million

Since 2005, atmosfair has been funding and operating climate projects globally, using voluntary contributions toward climate change mitigation. The process begins with a signed support agreement between atmosfair and the project operator, which outlines binding annual carbon dioxide reduction targets and specifies how atmosfair will support the project. The period between donation and actual carbon reduction can take up to one and a half years, as this time is needed for project setup and operation. The carbon reductions are then verified by UN-approved assessors.

Timeline for Donation Use in Climate Projects:

Start: atmosfair receives your climate change mitigation contribution.

Months 1–2: atmosfair or its partners purchase necessary hardware, such as building materials or photovoltaic panels. Whenever possible, materials are sourced locally to support local economies. However, this is not always feasible; for instance, many African countries must import steel. Despite these challenges, atmosfair strives to locally produce smaller components, such as pots for efficient cookstoves, even if the quality may not match stainless steel alternatives. Projects like building small-scale biogas plants for farms in Nepal and Kenya are a prime example, where nearly 100 % of materials, such as clay bricks and floor fill, come from the region.

Months 3–4: Materials are delivered to project partners. Importation challenges often arise, such as delays at customs, with shipments stuck in ports for months and incurring significant customs duties. Negotiating with local authorities, particularly with our strict zero-tolerance policy for corruption, is difficult. Internal logistics are also problematic, especially when security situations cause delays.

Months 5–6: Production and distribution of climate products (e.g., efficient cookstoves, small biogas plants) or project setup (e.g., installing photovoltaic systems for villages) begin. Depending on the technology, production can range from assembling prefabricated components, as seen with cookstoves in Rwanda, to more complex tasks like pressing and bending steel plates, which will be implemented in local cookstove production in Nigeria and Rwanda. Other projects, like biogas plants in Nepal, require small construction sites for installation over several days. In more complex cases, like photovoltaic systems, detailed planning is needed for assembly.

In household-level projects, sales efforts play a role, as the technologies are sold at reduced prices made possible by climate mitigation contributions. For efficient cookstoves, for instance, teams may travel hundreds of kilometers to present the products in villages and deliver them later. These operations require significant local staffing, often creating hundreds of jobs in large projects.

Months 7–19: Carbon emissions are physically reduced during the project's first operating phase. For example, once the new technology is operational, a diesel generator can be switched off, resulting in immediate CO_2 reductions, to the satisfaction of local users.

Months 20–22: An external UN-accredited assessor (e.g., TÜV) verifies the reduction in carbon emissions and generates assessment reports, which are repeated annually. The assessor inspects installations, interviews operators, and reviews all relevant data, allowing them to calculate actual carbon emissions reductions for the previous period. These assessors must be re-accredited by the UN every three years and are held liable for any errors. The UN publishes these reports on publicly accessible websites for transparency and accountability.

Months 23–24: UN bodies cross-check the assessment reports, and the Gold Standard verifies that the project contributes to sustainable development in the host country. This step typically involves multiple rounds of feedback between the assessor and UN bodies.

Goal, month 24: The UNFCCC Secretariat issues Certified Emission Reductions (CERs) to atmosfair's registry with the German Emissions Trading Authority, part of the German Environment Agency (UBA). Alternatively, the reductions are issued by the Gold Standard

While this step no longer affects the project itself, it remains critical for atmosfair's documentation. Registering atmosfair's emission reductions with the UBA offers donors a guarantee, as data is processed and saved by an independent governmental body.

Expenditure for climate protection projects 2025

Project category	Project	Expenditures 2025*	
Efficient cookstoves	India	1.24 %	46 %
	Nigeria	40.01 %	
	Rwanda	3.12 %	
	Lesotho	0.05 %	
	Malawi: Electric cooking	0.03 %	
	Uganda, Mozambique, Ghana	1.98 %	
Biogas & biomass	Kenya: small scale biogas plants for dairy farmers	0.15 %	2 %
	Nepal: Biogas	1.09 %	
	Tanzania: compost	0.08 %	
	Malawi: bricks	0.36 %	
	Columbia: biogas	0.09 %	
Sun and water	Kenya: solar water purification	0.04 %	13 %
	Madagascar: rural electrification	0.69 %	
	Mali: rural electrification	0.02 %	
	Senegal: solar power	4.02 %	
	Irak: solar power	0.17 %	
	Morocco: solar droplet irrigation	0.15 %	
	Dominican Republic: solar power	0.00 %	
	Burkina Faso: solar water purification	1.05 %	
	Togo: solar power	6.09 %	
	Tanazania: solar powered cooktops	0.08 %	
	Nepal Neue Energie (Helambu and Langtang Trek)	0.27 %	
	Nigeria: solar power	0.02 %	
Negative emissions	Indien: biochar TLUD	16.96 %	37 %
	Tanzania: biochar	0.99 %	
	Nepal: biochar	0.17 %	
	Namibia: biochar	0.28 %	
	Ghana: biochar	18.15 %	
	Ecuador, South Africa	0.67 %	
Environmental education and transformative projects	Germany: Education projects	0.95 %	2%
	Transformative projects	0.19 %	
	Kenya Electro Taxis	0.87 %	
Total expenditures 2025: 19 Mio Euro			100%

* Small share = Maintenance + ongoing operation; large share = New projects and expansion

Offsetting obligations and reductions achieved in 2025

Greenhouse gas reductions delivered and verified by UN auditors [1] [1,000 t CO_2]		2005–2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026[2]	Planned total until end of 2026[2]
Efficient cookstoves	Nigeria: efficient cookstoves[3]	40	0	124	86	36	40	28	20	15	21	0	15	423
	India: efficient cookstoves	98	20	20	103	140	149	273	533	674	663	656	475	3,804
	Lesotho: efficient cookstoves	43	25	28	29	29	26	25	25	25	19	0	0	273
	Rwanda: efficient cookstoves[3]	7	0	98	108	124	161	193	258	334	442	109	667	2,500
Biogas & biomass	India: power generation from residual biomass	201	69	0	56	69	62	54	0	0	0	0	0	511
	Kenya: small scale biogas plants for dairy farmers		3	0	5	7	0	0	0	7	9	7	0	38
	Nepal: biogas[3]		60	299	214	712	485	1,192	902	756	689	434	466	6,209
	Malawi: bricks											0	0	0
	Tanzania: compost									5	3	0	17	24
Sun, water, wind	Honduras: small scale hydropower	147	41	0	0	29	34	0	44	0	0	0	0	295
	Madagascar: solar PV								3	2	4	5	8	22
	Senegal: solar PV					50	85	67	120	125	106	102	70	724
	Other Solar PV (Iraq/Nigeria/Tanzania/Mali/Kenya)									1	1	2	5	9
Negative emissions	Biochar (India, Tanzania, Ghana, Namibia)										19	35	40	94
Concluded Projects	Diverse countries and project types	415	21	52	1	26	0	0	0	0	0	0	0	515
Total		**950**	**239**	**620**	**602**	**1,221**	**1,041**	**1,833**	**1,907**	**1,944**	**1,976**	**1,348**	**1,763**	**15,442**
Reduction obligation through voluntary climate protection contributions		804	71	86	129	488	336	372	426	426	308	271		
Reduction obligation through climate protection projects on behalf of clients		399	221	389	408	368	362	1,136	1,124	1,614	850	910		
Total reduction obligation		1,203	291	475	536	856	698	1,508	1,550	2,040	1,158	1,181		
Accumulated greenhouse gas reduction obligation		**1,203**	**1,494**	**1,970**	**2,506**	**3,362**	**4,060**	**5,567**	**7,118**	**9,157**	**10,315**	**11,496**		
Greenhouse gas reductions, verified by UN auditors, accumulated		**950**	**1,188**	**1,809**	**2,410**	**3,631**	**4,672**	**6,504**	**8,411**	**10,355**	**12,331**	**13,679**		

1
In the table, greenhouse gas reductions are listed for the calendar year in which they are verified by external auditors and certified by the applicable standard. Therefore, some greenhouse gas reductions achieved in 2025 are not yet recorded in this year, as they have not been certified yet

2
The greenhouse gas reductions indicated for 2026 are a forecast. The values may change in future annual reports.

3
The national government has committed to corresponding adjustments under Article 6 of the Paris Climate Agreement.

In total, it takes about

- 6 months: Your contribution starts physically reducing CO_2 in a project.
- 1.5 years: The first CO_2 reductions are certified by an independent assessor.
- 2 years: atmosfair receives formal proof of CO_2 reductions from the UN.

The table above shows the carbon emission reductions achieved in the final phase – verified, reviewed, and confirmed by the UN. These reports are available on the United Nations Framework Convention on Climate Change (UNFCCC) website, with links provided on the atmosfair site. The table also compares these final carbon emissions reductions with atmosfair's reduction obligations to donors, which are accounted for when the climate change contribution is first received.

Though it can take up to two years between receiving donations and obtaining formal UN verification, atmosfair has reduced this gap to zero. By the end of 2025, atmosfair's 11.5 million tons of CO_2 reduction commitments to donors and customers were already offset by 13.7 million tons of formally confirmed CO_2 reductions.

This surplus of 2 million tons provides a buffer for 2026.

This efficiency stems from atmosfair's conservative estimates of its projects' carbon emissions reductions. Additionally, some projects have been operating longer than initially planned, generating further reductions. In 2025, 1.3 million tons of CO_2 reductions from atmosfair projects were certified by UN auditors.

In 2025, we spent EUR 19 million on climate projects (see financial section, pages 28–33). Of this, approximately 46 % was allocated to efficient cookstove projects, 2 % to biogas and biomass projects, 13 % to solar projects, including solar agriculture and solar drinking water treatment, and 37 % to removal projects. Around 2 % of 2025's expenditures funded educational and transformative projects, primarily in Germany.

In some ongoing projects, the table may show zero carbon emission reductions. This doesn't mean the project isn't running or reducing emissions. Rather, it indicates that the UNFCCC has not yet published a report for that project in the given calendar year. As verification periods vary and don't always align with calendar years, emissions reductions can fluctuate annually, even for continuous projects.

SUNtec technicians prepare Dalavé's agri-photovoltaic system's connection to the Togolese power grid.

Financial Report

Summary

Revenue fell by 9 million euros from 2024 to 2025, reaching over 21 million euros. In 2025, atmosfair was able to invest approximately 19 million euros in climate protection projects.

In 2025, atmosfair again received no public funding. The only income from public institutions came through atmosfair's participation in tenders for CO_2 offsetting. No offsetting customer accounted for more than 10 percent of total revenue; thus, the non-profit atmosfair gGmbH remained financially independent.

For over 10 years, donations have been supplemented by income from business operations. The surpluses generated here cover part of the costs in atmosfair's non-profit section. In 2025, over 93 out of 100 euros of donations went into climate protection projects, either directly into technologies such as efficient stoves or solar systems, or to planners and operators of renewable electricity production projects. atmosfair used barely 7 out of 100 euros for its own personnel, who handle project administration and donor support, and for other costs such as IT, accounting, rent, or credit card fees.

Supervision / Organisation / Non-Profit Status

The shareholders' meeting of atmosfair gGmbH was expanded in 2021 and now consists of equal shares between the existing shareholder Foundation for Sustainability and Dr Dietrich Brockhagen. While the foundation solely appoints the members of the company's control bodies, Dr Dietrich Brockhagen is responsible for the company's business matters. Following the four-eyes principle, he also manages the company's business together with the second managing director Steffen Pohlmann under the supervision of the company's control bodies. The first control body is the independent advisory board for atmosfair standards, consisting in 2025 of representatives from climate-relevant federal ministries (BMUKN, BMZ), one professor each from ZHAW and HTW, and a representative from Germanwatch. It met two times in 2025.

The advisory board oversees management in matters of environmental integrity and decides on the approval of new climate protection projects, development and control of atmosfair standards including emission calculations, and the approval of new business cooperations.

As a second control body, the Foundation for Sustainability appointed a supervisory board in 2021, consisting of three members. As an independent body, the supervisory board controls the regularity and economic integrity of the company and exercises the following statutory powers:

- **A.** Resolution on accounting
- **B.** Discharge of management
- **C.** Appointment of auditors
- **D.** Decision on management compensation

The tax exemption of the non-profit GmbH for 2025 was certified by the tax administration. For climate protection contributions received in 2025, the non-profit GmbH properly issued donation certificates. To make its own work transparent for the public and donors, atmosfair follows the voluntary commitment of the Transparent Civil Society Initiative and publishes the desired information on its website according to the initiative's requirements.

Financially Independent

In 2025, atmosfair was entirely financed through donations for CO_2 offsetting and income from business operations. The latter is also permitted to a non-profit organization to a limited extent. In 2025, neither did the shareholders pay money to atmosfair, nor did atmosfair pay money to the shareholders.

Expenses for Planning Climate Protection Projects

The largest item in expenses is the development and operation of climate protection projects. These include costs for purchasing technologies or building materials (e.g., steel for efficient stoves) on one hand. On the other hand, they include expenses for project development and operation, including inspections by TÜV and other UN-accredited auditors, as well as for project personnel abroad.

Balance sheet 2025/Assets

		2025 EUR	2024 EUR
A	**Fixed assets**	929,345.00	1,940,582.38
I	Intangible assets	13,308.00	15,053.80
II	Tangible assets	44,617.00	54,108.58
III	Financial assets	871,420.00	1,871,420.00
B	**Current assets**	51,774,914.73	48,224,803.44
I	Inventories	2,676.08	2.00
II	Receivables		
	Trade receivables	604,575.65	862,536.59
	Receivables from affiliated companies	2,600,012.40	3,900,012.40
	Other assets	16,654,277.81	9,845,213.87
III	Cash and cash equivalents, etc.	31,913,372.79	33,617,038.58
C	**Accurals and deferred income**	2,918.13	1,584.57
Balance sheet total		**52,707,177.86**	**50,166,970.39**

In total, atmosfair spent approximately 17 million euros here. In addition to the expenses for CO_2 offset projects, there were personnel costs for project planning and implementation, which amounted to approximately 2 million euros in 2025. In total, since its founding, atmosfair has supported climate protection projects with about 195 million euros.

As a basis for calculating funding commitments for their climate protection projects in a given year, atmosfair normally takes the average of the revenue from the previous two years. This complies with the principle of timely use of funds and gives atmosfair sufficient security for long-term funding commitments to project partners in the Global South. Furthermore, this allows for planning and building new projects, even if revenue should temporarily decline. Moreover, due to the lead time of about one year between project idea and use of funds for hardware such as efficient stoves or solar systems, new projects are not practically feasible otherwise. From 2024 to 2025, atmosfair's revenue fell by 9 million euros. According to the above principle, this would have led to a funding volume of about 26 million euros in 2025. atmosfair has fulfilled this. The bank balance fell from 34 million euros (2024) to about 32 million euros in 2025. atmosfair created net provisions of about 2.5 million euros in 2025.

Salaries According to TVöD for Employees and Management

After climate protection projects, personnel expenses were the second-largest cost factor. atmosfair employees are paid according to the public service tariff system (TVöD), with classifications ranging from project manager to management at levels 11–15. General administrative costs for telephone, postage, insurance, and office supplies amounted to about 181,000 euros. Rent and office maintenance totaled approximately 263,000 euros. Additional administrative costs can be found in the income and expenditure statement table.

Balance sheet 2025 / Liabilities

		2025 EUR	2024 Euro
A	**Equity**	25,395,532.32	22,843,325.54
	I Subscribed capital	25,000.00	25,000.00
	II Reserves for statuory projects		
	Short-term reserves for climate protection projects	0.00	0.00
	Free reserves (including for climate protection projects)	25,370,532.32	22,818,325.54
B	**Provisions**	26,360,059.19	26,595,314.09
	Tax provisions	1,353,905.79	1,759,808.95
	Provisions for climate protection projects	25,006,153.40	24,835,505.14
	Other provisions	0.00	0.00
C	**Liabilities**	951,586.35	728,330.76
	Trade payables	369,869.65	360,738.78
	Other liabilities	581,716.70	367,591.98
D	**Accurals and deferred income**	0.00	0.00
Balance sheet total		**52,707,177.86**	**50,166,970.39**

Administrative Costs of 7 Percent

One of atmosfair's standards requires efficient use of donations; therefore, only a small portion of donations may be used for administrative costs. This refers to funds that don't flow into climate protection projects because atmosfair needs them for administration and fundraising. In 2025, a total of nearly 1.6 million euros was spent on this, which, in addition to the above-mentioned items, mainly went to personnel costs and material costs in public relations, IT, accounting, credit card fees, travel expenses, etc. (see table blocks b) and c) under expenditures). This corresponds to an administrative cost ratio of approximately 7 percent of revenue.

The administrative costs are so low also because atmosfair continued to avoid paid advertising such as promotion teams in 2025 and instead gained public visibility through content-driven campaigns in the media free of charge. The participating celebrities also contribute to promoting atmosfair without offsetting.

DZI Donation Seal

The DZI audits non-profit organisations in Germany with regard to their use of donations and the appropriateness of their organisational structures. atmosfair held the DZI donation seal until September 2024 and has been confirmed a particularly low administrative cost ratio – 3.8 per cent in 2020 and 4.4 per cent in 2021. These are top values in Germany.

The DZI uses a complex approach for its calculations and arrives at lower figures for administrative costs than atmosfair itself.

Due to the high costs of the DZI seal, we have decided to refrain from renewing our certification for the time being.

Profits Achieved Increase Funding Volume for Climate Protection Projects

In 2025, atmosfair achieved surpluses of just over 500.000 euros after taxes and before provisions in its business operations with services for companies, which were achieved through the operation of climate protection projects on behalf of customers, sale of CO_2 balancing software, and consulting services (climate service for companies). atmosfair uses the surpluses directly for climate protection projects.

Goal Achievement

Together with the CO_2 reductions certified in 2025, atmosfair has achieved more CO_2 reductions in its climate protection projects from 2005 to 2025, i.e., since atmosfair's founding, than reduction obligations arising from voluntary climate protection contributions and customer orders. This resulted in a surplus of about 2 million tons of CO_2 reductions (see table). Thus, atmosfair has overachieved its obligations to all customers and donors and built up a buffer for 2026.

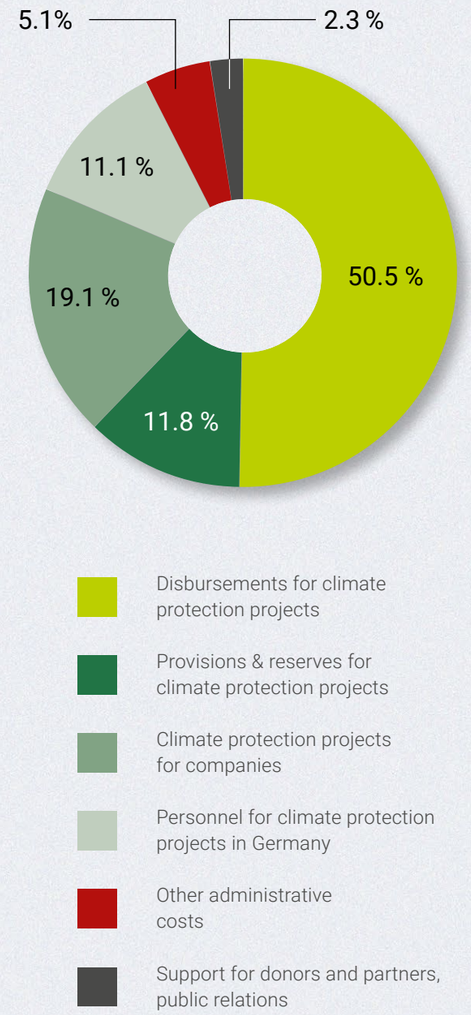
Audit and Discharge of Management

The 2025 annual financial statements were audited in accordance with the articles of association by an auditor appointed by the supervisory board. The auditor confirmed the annual financial statements, raised no objections, and issued an unqualified audit opinion as in previous years. The supervisory board confirmed the proper 2025 financial statements and discharged the management.

Income and Expenditure Statement 2025

Income	2025 EUR	2025 %	2024 EUR
Voluntary climate protection contributions for climate protection projects	15,632,248	73.7	22,987,283
Climate protection projects on behalf of customers, CO_2 accounting software, consulting, etc. before taxes (economical business operations)	5,061,843	23.9	7,422,800
Other income (interest etc.)	511,785	2.41	47,807
Total	21,205,876	100.00	30,457,889
Expenditures			
A Climate protection projects for CO_2 offsetting, private and corporate customers			
Direct expenses (planning, construction, operation, technology purchasing, testing, personnel in developing countries)	-10,713,115	50.5	-14,750,938
Net creation/release of provisions and reserves	-2,511,617	11.8	-6,835,954
Total climate protection projects CO_2 offsetting	-13,224,732	62.4	-21,586,893
Personnel: project planning and support by atmosfair employees in Germany and in the project countries	-2,346,423	11.1	-2,079,776
B Administrative cost: support for donors and partners, donor recruitment, public relations work			
Personnel cost	-487,862	2.3	-353,963
Editorial office public relations	0	0.0	0
Total	-487,862	2.3	-353,963
C Other administrative expenses			
Office administration (telecommunications, postage, office supplies, insurance, membership fees, depreciation)	-181,072	0.9	-133,536
Rent and maintenance	-262,856	1.2	-202,208
Credit card fees, payment service providers, account fees, exchange rate differences	-127,587	0.6	-123,946
IT (fees, maintenance fees, server rental)	-79,069	0.4	-37,731
Accounting, tax consultancy, annual financial statements, auditor	-236,429	1.1	-209,050
Printing cost for publication	-19,168	0.1	-12,511
Contracts for work and services	0	0.0	0
Travel and representation cost	-38,802	0.2	-26,713
Non-deductible input tax	-144,390	0.7	-109,406
Total	-1,089,373	5.1	-855,100
D Commercial business operations: sustainability counseling for companies			
Expenditure on climate protection projects on behalf of customers	-3,401,396	16.0	-4,622,271
CO_2 accounting software	-79,069	0.4	-37,731
Personnel: sustainability counselling for companies	-325,241	1.5	-235,976
Taxes on income from sustainability counselling and climate protection projects on behalf of customers	-251,780	1.2	-686,180
Total	-4,057,486	19.1	-5,582,158
E For information purposes: surpluses and utilization			
Surpluses from economic business operations 2025, after taxes, before provisions	560,750	2.6	6,732,910
Total	-21,205,876	100.0	-30,457,889
Result after reserve release / surplus utilization	0		0

Expenses of atmosfair in 2025



References /Selection

Companies

50Hertz
AEB SE
AirPlus International GmbH
BayWa r.e. renewable energy GmbH
Beiersdorf AG
BMW AG/Group
DB Cargo AG
Deloitte
Deutsche Bahn AG
Deutscher Akademischer Austauschdienst (DAAD)
Deutsches Zentrum für Luft- und Raumfahrt e.V.
DHL
DFL Deutsche Fußball Liga GmbH
FlixBus
FTI Consulting
Hermes Germany GmbH
HRG Sports
InfectoPharm, Arzneimittel und Consilium GmbH
INFRAS AG
JustWatch GmbH
Klöckner & Co. SE
Knorr Bremse AG
Mercedes-Benz AG
meteoblue AG
Otto Group
Pfinder KG
QVC Deutschland
DB Schenker
SDC Bank
SICK AG
SNV Netherlands Development Organisation
Tallin Airport
Teva Health GmbH
Toll Collect
VHV Vereinigte Hannoversche Versicherung a.G
WALA Heilmittel GmbH
wpd AG
W&W Service GmbH

Government, NGOs, Politics, Science and Associations

Alexander von Humboldt Stiftung
Behörde für Umwelt, Klima, Energie und Agrarwirtschaft Hamburg (BUKEA)
Deutsche Bundesregierung
Deutsche Energie-Agentur GmbH (dena)
Deutsches Youth For Understanding Komitee e.V.
(YFU)
École Polytechnique Fêdêrale de Lausanne
ETH Zürich
Fraunhofer Gesellschaft
German Doctors e.V.
GIZ
Goethe Institut e.V.
Greenplanet Energy
Harvard University
ifeu gGmbH
Klimaschutzstiftung Baden-Württemberg
Landeshauptstadt München
Lions Clubs International
Öko-Institut e. V.
Stadt Hamburg
Stiftung Entwicklungs-Zusammenarbeit
The Climate Group
Universität Basel
Universität Bern
Universität Zürich

Events

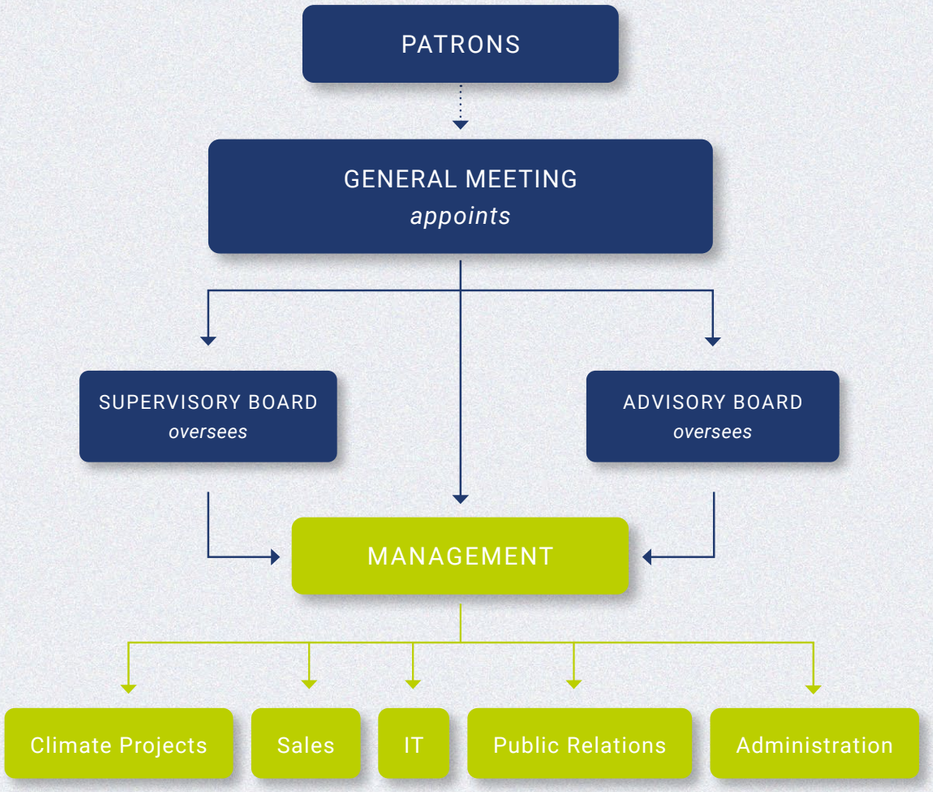
ARRtist Summit
Deutsche Hospitality
Die Ärzte
Die Toten Hosen
FKP Scorpio Konzertproduktionen
ITB Berlin
NY Climate Week
Tollwood

Tourism

AER Ticket
DAV Summit Club GmbH
Dein Marokko
Durchblick Leserreisen
Eurotours
Fairweg
Forum Anders Reisen
Frosch Sportreisen
Hauser Exkursionen
Insight Reisen GmbH
Lufthansa City Center Reisebüropartner GmbH
Neue Wege Reisen
QTA Raiffeisen-Tours RT-Reisen GmbH
REISEN MIT SINNEN
RTK Reisebürokooperation
Schauinsland Reisen
Schmetterling International
Weltweitwandern
Willy Scharnow-Stiftung
World Insight

Structure & Organisation

atmosfair gGmbH was founded in 2004 by the two current shareholders Stiftung Zukunftsfähigkeit and Dr Dietrich Brockhagen from a research project of the BMU. The research project had previously developed the central standards for CO_2 offsetting that still guide atmosfair today. To ensure compliance with these standards, the federal government still sends employees from various ministries to the atmosfair Expert Advisory Board.



Patrons

The patrons are voluntary supporters and ambassadors of atmosfair. They are also members of the Expert Advisory Board but have no voting rights

Prof. Dr. Mojib Latif
Senior Professor at GEOMAR
President, German Chapter CLUB OF ROME

Prof. Dr. Hartmut Graßl
Physicist, former Director of the Max Planck Institute for Meteorology in Hamburg

Supervisory Board

As an independent body, the supervisory board controls the regularity, economic integrity, and soundness of the company. The supervisory board adopts the annual financial statements of atmosfair gGmbH, appoints auditors, decides on the discharge of management, and their compensation. The members of the supervisory board are appointed and removed by the shareholder Stiftung Zukunftsfähigkeit.

Dr. Harry Lehmann
Supervisory Board Chairman and Director PtX Lab Lausitz, Zukunft – Umwelt – Gesellschaft (ZUG) gGmbH

Yvonne Wende
Deputy Chair and Founder, CEO and Principal of Berlin Cosmopolitan School

Dr. Christoph Mecking
Managing Partner, Institute for Foundation Consulting

Expert Advisory Board

The Expert Advisory Board approves projects and the allocation of funding. It also advises atmosfair on environmental integrity issues and develops atmosfair standards further.

Klaus Milke
Chair without voting rights
Chairman of Stiftung Zukunftsfähigkeit

Prof. Dr. Barbara Praetorius
Professor of Sustainability, Energy and Environmental Economics, Berlin School of Economics and Technology

Christoph Bals
Political Managing Director, Germanwatch Spokesperson, Climate Alliance Germany

Prof. Dr. Regina Betz
Professor of Energy and Environmental Economics, Zurich University of Applied Sciences
Head, Center for Energy and the Environment

Malin Ahlberg
Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN)

Dr. Ursula Fuentes Hutfilter
Head of Department UNFCCC and Paris Agreement, international negotiations, BMUKN

Dr. jur. Annette Windmeisser
Head of Department, Climate Finance, Federal Ministry for Economic Cooperation and Development (BMZ)

Tests & Press

atmosfair emerged as the winner in all twelve comparative studies and tests since its founding in 2005.

In our test winner brochure, we present all comparisons for offsetting providers according to various criteria. You can view and download the brochure on our website at: atmosfair.de/testsieger

Here are our latest test results:

Stiftung Warentest Finanzen (Issue 3/2025)
CO_2 Offsetting: Flying, donating and helping the climate

Stiftung Warentest Finanzen compares four providers for CO_2 offsetting and concludes that only atmosfair offers a true offset for greenhouse gases caused by a flight. A unique feature is that only atmosfair has agreed on Corresponding Adjustments with partner countries. Saved CO_2 emissions are thus actually offset. In assessing the quality of climate projects, the article refers to the results from the previous test in 2022.

Quote from the testers' report: "You can currently find a true 'direct' offset for the greenhouse gases caused by your flight at atmosfair."

Stiftung Warentest (Finanztest, Issue 11/2022)
CO_2 Offsetting – Help climate action with these providers

Stiftung Warentest's Finanztest examined four providers offering voluntary CO_2 offsetting. Between June and September 2022, questionnaires were sent out and websites evaluated. The focus was on offsetting quality, transparency, management and control, as well as the principle "Avoid before Reduce before Offset." There are differences especially in offsetting quality.

Only atmosfair could "convince comprehensively." As test winner and the only provider, we received the overall grade "Very Good" (0.5) and the top grade in offsetting quality in the test.

You can find the complete article as a paid download on the website test.de

Test result:
Overall grade: 0.5 (very good)
Offsetting quality: 0.5 (very good)
Transparency: 0.5 (very good)

Quote from the testers' report: "Compared to the previous study, the quality of offsetting has deteriorated for three of the four providers. Only atmosfair could convince comprehensively."

Download Broschüre:

atmosfair.de/testsieger

"According to the report, atmosfair is currently the only one of the four providers to offer direct offsetting for greenhouse gases"

19 February 2025: Süddeutsche Zeitung [original article in German]

"The provider has agreements with some countries where the CO_2 savings are credited to the specific climate project and not to the country's national climate target.""

"Cooking without harmful fumes"

30 July 2025: Frankfurter Rundschau [original article in German]

"These efficient stoves not only lower CO_2 emissions and conserve valuable resources, using them also improves indoor air quality and reduces health risks. [...] It was found that women who use the Save 80 spend less time cooking and breathe much cleaner air than women who use traditional cooking stoves." [from a study on atmosfair's Save 80 stoves in Rwanda]

"atmosfair: Airlines fail to meet climate targets despite greater efficiency"

20 November 2025: Stern.de [original article in German]

"According to the organisation atmosfair, rising passenger numbers and slow progress on efficiency mean that the carbon footprint of global passenger air travel has almost returned to pre-COVID-19 levels. The organisation reported on Thursday that the environmental impact of flights in business and first class is particularly high. As a result, atmosfair backed calls from several countries for a luxury tax on these flights."

"Residues from agriculture and the timber industry can make a significant contribution to tackling climate change""

10 December 2025: ntv.de [original article in German]

"Even with 'the highest standards of environmental and social compatibility', fuels made from biomass from residues could meet one-fifth of global aviation's total fuel requirements, atmosfair explained on Wednesday. This could also help to reduce global inequality at the same time."

"Wood chips in aircraft fuel tanks"

11 December 2025: klimareporter° [original article in German]

"Large quantities of agricultural and forestry waste in the Global South have so far gone unused, says the carbon offset provider atmosfair. [...] According to the study, around 400 million tonnes of the roughly 3.4 billion tonnes of biomass from resides generated annually in the countries of the Global South could be put to socially and environmentally compatible use. [...] atmosfair and Ifeu emphasise that, in addition to kerosene production, local electricity generation or use as biochar are also good ways of combating climate change with biomass from residues."

> Perhaps the biggest– and most disastrous – misconception about climate action is that people see it as something detached from themselves and their lives. Only when we all realise that protecting the climate means protecting ourselves we will be able to turn things around. This is exactly where atmosfair comes in.

Maren Urner is a neuroscientist, author and professor of Sustainable Transformation at Münster University of Applied Sciences.

Her work focuses on the role of emotions in human behaviour and on shaping a sustainable future with the involvement of as many people as possible.