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atmosfair



# Annual Report 2012



atmosfair was founded in 2004 in a research project of the German Federal Ministry of the Environment. In this project, fastidious standards for voluntary CO<sub>2</sub> compensation were developed.



## Standards

### Approach



*If I fly – I fly atmosfair.*

- Compensation is only the second-best option; direct CO<sub>2</sub> avoidance is more effective
- Climate protection is more important than maximising donations
- Essential component: raising awareness leads to direct CO<sub>2</sub> avoidance in the longer term

### Climate protection projects



- Enduring CO<sub>2</sub> reduction
- Contribution to North-South technology transfer
- Direct help for the local population
- Contribution to local environmental protection

### CO<sub>2</sub>-calculation



- Complete
- Scientifically based
- Documented
- Reviewed

### Organisation and finances



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

atmosfair's standards act as a quality benchmark for the offsetting industry. atmosfair is the many-time test winner of international comparative studies.

*atmosfair wind power project in South Africa*

## Implementation

- Cooperation with business travel specialists for travel optimisation, including videoconferencing
- No cooperation with partners that do not comply with atmosfair standards (e.g., in CO<sub>2</sub> calculation), even if atmosfair would have earned significant revenues
- No compensation of activities for which there are better and simpler solutions to avoid CO<sub>2</sub> (e.g., private car use or power consumption)
- Presentation of the actual climate burden (see CO<sub>2</sub> calculation), independent of industry

- All projects must fulfil two standards: CDM (UN) and the "Gold Standard" (environmental NGOs)
- Calculation and monitoring of the CO<sub>2</sub> reduction according to UN standards
- Qualified and UN-approved auditors (e.g., TÜV) who must accept the liability for errors
- Documentation of all auditing reports via the website of the UN Climate Change Secretariat
- No afforestation projects, only renewable energy and energy efficiency
- Implementation together with experienced partners in developing countries



- Inclusion of all climate impacts of air travel (e.g., contrails, ozone formation, etc.) in accordance with the latest findings of the scientific community (IPCC), resulting in a significantly higher climate impact than with CO<sub>2</sub> alone
- Own emissions calculator checked by the German Federal Environmental Agency
- All data sources and methods documented on the atmosfair website



- Low administrative costs: over 90 % of revenues from donations are invested in the climate protection projects in developing countries for planning, setup, and operation
- Donations are tax-deductible and monitored by the tax authorities
- Exacting legal form "non-profit company with limited liability" with liability and publication in the German Commercial Register
- Advisory Board composed of high-profile mentors and environmental experts from the Federal Ministry for the Environment, NGOs, and the scientific community, among others



Clear view of  
Alaska

Source: NASA VisibleEarth

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### ***Imprint***

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## Dear readers,

atmosfair employees don't fly very often. However, in December of 2012, the audit of our big stove project was approaching, so I picked up Karunakar, a UN-accredited Indian auditor, at the airport of the Nigerian capital Abuja. We had a week to search for and monitor 67 randomly sampled stoves, which were spread out over all of Nigeria. We drove from one village to the next up to the edge of the desert in the North, more than a thousand kilometres in total. In the process, it became clear to me that people strongly resemble each other in essential respects in spite of all of their physical and cultural differences. I lost my mobile phone in a hospital. I was simply grateful to the honest finder who returned it to me. Later, I experienced Nigerian mothers who wanted to express their gratitude by all means in just the same way. You can read more about our stove projects on pages 11-13. We will conduct our sixth stove project in Ethiopia, by the way, this time together with the World Food Programme. It is the first time that atmosfair will work directly together with a large humanitarian organisation. For companies that use SAP travel cost accounting: as of 2012, you can use a software developed by atmosfair and the IT service provider conovum in order to calculate the CO<sub>2</sub> emissions for business trips according to the VDR Standard. The first large consulting contracts with mid-sized companies show that making travel policies greener can also be financially profitable for companies.

### Airline Index and new awards

In its second edition, the Airline Index 2012 caused a stir. The Index went through the European press, and several hundred articles, including



Source: atmosfair gGmbH

*Dietrich Brockhagen,  
Managing Director of atmosfair*

some on front pages, drew attention to air traffic and climate. This year, we honoured the cleanest airlines for the first time because praise is also motivating when it comes to climate protection.

We were also thrilled to receive two awards in 2012. Firstly, *fw*, the professional magazine for tourism and business travel, evaluated various websites of compensation providers from the customer's perspective. atmosfair received the magazine's "Mystery Shopper Award." "Gladly again!" read the tester's conclusion. In addition, atmosfair's climate protection campaign won the Airport Media Award. "A campaign with brains," judged the jury; in addition, it found "proactively dealing with the topic of climate protection directly on-site" to be fitting. Incidentally, the celebrities were not remunerated for their participation in the campaign. You can read what else motivated Sönke Wortmann to acknowledge "I fly atmosfair" on page 26.

Many thanks to all of our supporters and partners,

Dr. Dietrich Brockhagen  
Managing Director atmosfair gGmbH



*"The Deutsche Welle portrayed our project 'electricity energy from crop residues' in India. You can find the link to this report on our website; it is well worth seeing."*

# Air traffic worldwide to set the course for climate protection

## International comparison of China and Germany

Around 100 airports are currently under construction in China, and many others are being expanded. While Boeing's and Airbus' highest hopes lie in China, the country is building its own long-distance airplane. The world of air travel has undergone rapid change since the turn of the millenium. In the mid-1990s, Europeans still flew ten times more often than people in India and China; in the meantime, these countries have caught up. Since the attacks of September 11th, 2001, air traffic in Germany has grown by 20 percent. In the same time, it quadrupled in China.

## Decision 2013

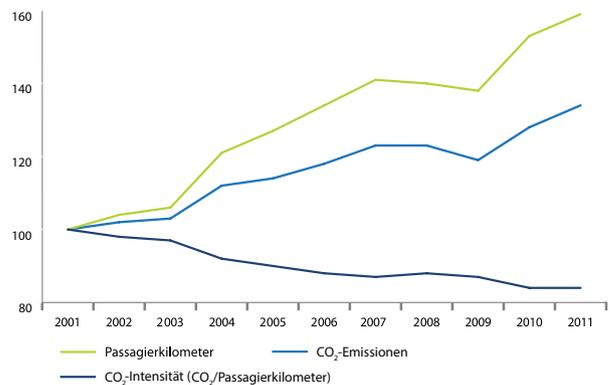
In contrast, little has happened with climate protection. In 1997, the International Civil Aviation Organization ICAO was appointed in the Kyoto Protocol to make global air traffic more climate-friendly. However, next to nothing has happened since then, including because industrial and developing countries like the U.S., India, Brazil, and Europe could not agree. This could change in 2013: if a judgement is made at the ICAO general assembly in Montreal, something could finally happen. It is unlikely that 190 member states would choose a demanding climate protection concept, but at least a global decision would be made after a 16-year standstill.

## Coalition of the unwilling

The driving force here was the EU, which led the way in 2012 and unilaterally included air traffic in the EU Emission Trading Scheme. All foreign carriers that started or landed in the EU were also included. A coalition of unwilling parties made up of 26 states, including the U.S., China, Russia, and India, quickly formed and protested against this to the EU. China froze the funds for a 14 billion dollar contract with Airbus. While the European Court of Justice ruled that the EU law was legitimate, the U.S. and China adopted regulations that prohibited their airlines to pay for CO<sub>2</sub> in the EU. Under international pressure, the EU suspended the new law under Environment Commissioner Connie Hedegaard in November of 2012 until after the ICAO assembly in 2013 with the

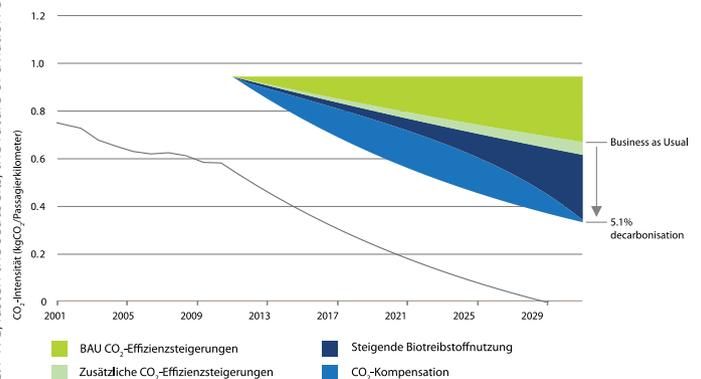
threat to introduce it again if the ICAO cannot agree on an adequate climate protection policy. However, the branch's plans so far are hardly adequate. Indeed, the global air traffic association IATA voluntarily pledged itself to reduce CO<sub>2</sub> emissions by 50 percent from 2005 by the year 2050. To achieve this, usage per transport-kilometre would need to decrease by around 1.5 % per year if traffic increases constantly. However, as a study by the consulting

## Trends in air traffic from 2001 to 2011



Air traffic is growing faster than its CO<sub>2</sub> efficiency: emissions are increasing.

## CO<sub>2</sub>-reduction measures in air traffic, 2001-2031



Business as usual is not enough to achieve the 2°C climate protection goal

Source: PWC, fasten the seatbelts, the future of aviation emissions regulation, 2012

company PWC shows, this is not enough to meet the 2° C climate protection goal: according to the study, the CO<sub>2</sub> efficiency of air traffic would need to improve by over 5 % per year, in other words, more than three times as fast.

#### **German air traffic in the middle**

In Germany, the Association of Air Transport Companies touts that German airlines only use four litres of kerosene per 100 passenger-kilometres on average. With this amount, German air traffic lies in the middle globally. However, in order to be able to achieve the 2° C goal, we would already need a two-litre airplane by 2020, and time is running short. The difficulty is that new technological advances are hardly possible in air traffic; the current technology is already too close to the physical optimum.

#### **The UN follows an approach similar to atmosfair's**

Thus, a prominent consulting group followed a different approach in 2010 on behalf of UN Secretary General Ban Ki-Moon. According to the group, flights should be charged so much financially that developing countries do not bear the economic brunt. This should happen through the fact that, although climate taxes will be levied for all flights, the revenues must be used for specific climate protection measures in developing countries. This matches atmosfair's approach also because it is conceived of only in addition to measures within the air traffic branch.

## **Climate protection policy in air traffic – developments and standstills**

**1994, EU:** *The Council of Ministers determines that the air traffic industry should pay a tax on petroleum on environmental grounds.*

**1995, Germany:** *On the initiative of the Federal Environmental Agency, the European ministers speak in Sofia about the introduction of an international kerosene tax. It will not come.*

**1996, UN:** *The International Civil Aviation Organization (ICAO) resolves to create a legal basis in order to introduce environmental fees to the states. Nothing happens for 10 years.*

**1997, Kyoto:** *The ICAO is commissioned with the task of developing appropriate measures to reduce emissions in air traffic.*

**2003, EU:** *Member states are allowed to tax kerosene for domestic flights. No member state uses the regulation.*

**2008, EU:** *Air traffic should be integrated into the EU Emission Trading System (EU ETS) as of 2012. Flights departing from and in the EU should also be included.*

**2009, IATA:** *The International Air Transport agency (IATA) would like to achieve CO<sub>2</sub>-neutral growth as of 2020 and halve the amount of CO<sub>2</sub> emissions in 2005 by 2050.*

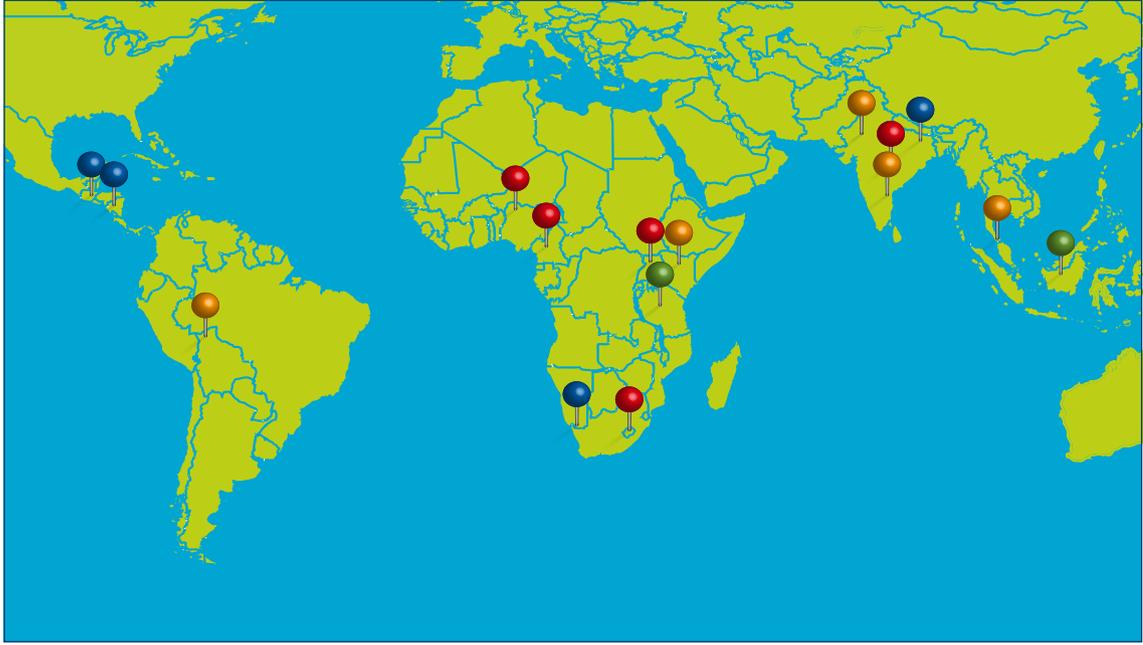
**2010, UN:** *The ICAO resolves to strive for CO<sub>2</sub>-neutral growth as of 2020.*

**2010, UN:** *A High-Level Advisory Group (AGF) recommends using air traffic for financing climate projection projects.*

**2013, EU:** *"Stop the clock:" due to political pressure, the EU Commission resolves to remove international air traffic from the EU ETS.*

**2013, EU:** *The ICAO should produce a contract and timeline for the implementation of a global emission trading system by 2016; otherwise, the EU wishes to once again unilaterally include international air traffic in the EU ETS.*

## Our projects



*Efficient woodburning stoves*



As a result, less wood will be felled to be used as fuel for cooking. Through the work of atmosfair, over 40,000 stoves are already in use in Nigeria, Lesotho, Cameroon, Rwanda, and India.



*Wind and hydropower*



In Honduras, we support a small hydropower project and windparks in Nicaragua and South Africa. All projects are sustainable and also help the local economy.



*Biogas and biomass*



The small biogas systems ferment cow dung into biogas. The biomass systems produce electricity by burning Brazil nut shells and other harvest residues. We support projects in India, Thailand, Bolivia, and Kenya.



*Waste avoidance*



Small recycling centers in Indonesia recycle raw materials and compost targeted organic waste. We are helping to transfer this technology to Tanzania. This helps reduce the amount of environmentally damaging methane released.

## Climate gas reduction, achieved or contractually bound

1.0 = 1000 Tonnen CO<sub>2</sub>

Efficient wood-burning stoves	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2020	Total until 2020
<b>Nigeria</b>				0.5	4.0	9.0	18.5	30.0	42.0	153.0	<b>257</b>
<b>India</b>							1.5	4.5	7.0	27.0	<b>40</b>
<b>Cameroon</b>							3.0	10.0	10.0	30.0	<b>53</b>
<b>Lesotho</b>							1.0	6.0	6.5	29.0	<b>43</b>
<b>Rwanda</b>							1.0	5.0	5.0	35.0	<b>46</b>
Biogas and biomass	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2020	Total until 2020
<b>India: electricity production from crop residues</b>			11.0	43.0	28.0	36.0	37.5	37.0	37.0	28.0	<b>258</b>
<b>India: biogas systems for households</b>			14.0	11.0	11.0	11.0	11.0	11.0			<b>69</b>
<b>Kenya: small biogas systems for dairy farmers</b>							0.5	1.0	4.5	82.0	<b>88</b>
<b>Thailand: biogas and sewage</b>				2.0	5.5	5.5	5.5	5.5		27.5	<b>52</b>
<b>Bolivia: electricity from Brazil nut shells</b>							0.0	1.0	1.0	8.0	<b>10</b>
Wind and hydropower	2006	2007	2008	2009	2010	2011	2012	2013	2014	2014-2020	Total until 2020
<b>Honduras: small hydropower plant</b>	15.0	13.0	20.0	9.0	26.0	33.0	32.0	32.0	32.0	95.5	<b>308</b>
<b>Nicaragua: wind power</b>				63.0	57.0						<b>120</b>
<b>South Africa: wind</b>										96.0	<b>96</b>
Total	15.0	13.0	45.0	128.5	131.5	94.5	111.5	143.0	145.0	611.0	1,438
<b>Reductions pledged in climate protection contributions received</b>		9.5	9.5	63.5	88.6	92.2	93.6	82.6	92.2		
<b>Reductions pledged in climate protection projects on behalf of customers</b>				3.5	15.0	63.8	40.0	50.0			
<b>Accumulated climate gas reduction pledges in climate protection contributions received</b>	0.0	9.5	19.0	86.0	189.6	345.6	479.2	611.8	704.1		
<b>Accumulated climate gas reductions achieved or contractually bound</b>	15.0	28.0	73.0	20.5	333.0	427.5	539.0	682.0	827.0		
<b>Pledges fulfilled</b>											

<sup>1</sup> Up to two years can pass between the receipt of a donation and its use in a climate protection project. For this reason, the revenues from the reporting year 2011 are presented as pledges to be fulfilled in 2013.

### Fulfilment of pledges

For every project, atmosfair concludes a grant agreement with the project operator. In this, the amount of CO<sub>2</sub> savings that must be achieved each year is specified in binding form. UN-certified auditors confirmed the CO<sub>2</sub> savings identified here. atmosfair has always fulfilled its pledges since its first year of operation in 2005 and achieved

the level of CO<sub>2</sub> reduction corresponding with all incoming donations. Up to two years can elapse between the time when the donation is made and the time that the CO<sub>2</sub> reduction occurs. This is the time that we need for the planning and development of the project as well as the comprehensive audits (see page 21).

## From your climate protection contribution to the project

**In the financial year 2012, atmosfair received around 3 million euros in climate protection contributions. With these funds, we operate 14 climate protection projects in 11 countries together with local partners.**

In this, atmosfair concentrates mainly on developing countries. This is because the poorer people there are the ones who are already suffering the most from climate change. With this, we are staying true to what patron Klaus Töpfer wrote to us in our register: our projects will only be successful if we also provide a solution for the pressing problems that people face.

Take the example of efficient wood-burning stoves: they require up to 80 percent less firewood and in this way help to hold back deforestation. They are a real hit, however, because the families that use them no longer must spend up to a third of their income on firewood, but rather use just one tenth of the firewood formerly used to cook.

### CO<sub>2</sub> savings must be substantiated

In order to guarantee these benefits for people, the environment, and the climate, we select our local project partners carefully. In addition, atmosfair is the only organisation of its kind that conducts over 90% of its projects according to the Clean Development Mechanism (CDM), the UN standard for climate protection projects. We also audit all of our projects according to the Gold Standard.

This means that the government of the host country must agree that the project is desired and contributes to sustainable development. A local environmental impact assessment and a hearing in which all direct and indirect participants are questioned must take place.

All of this is monitored by UN-accredited auditors, for example by TÜV. These auditors travel to Nigeria, for example, and weigh how much wood a housewife uses each day to cook and whether the efficient stove really saves so much wood. The auditor only gives the go-ahead for the project when all of the detailed questions are answered and vouches for the accuracy of the answers.

Before atmosfair can claim to have saved even a tonne of CO<sub>2</sub>, the UN auditor travels to the site once again, this time for the so-called verification. In practice, that means that atmosfair Managing Di-

rector Dietrich Brockhagen plus employees accompany two UN auditors 2,000 kilometres through Nigeria. The task: to locate the owners of 67 randomly sampled wood-burning stoves out of the 15,000 that atmosfair has sold in Nigeria since 2007. For each stove that is not found or not used, CO<sub>2</sub> savings are deducted. atmosfair can only claim credit for the CO<sub>2</sub> savings once the verification has been successfully completed.

### Excerpt from Dietrich Brockhagen's travel report

(atmosfair newsletter 1/2013)

*"Sofia always goes ahead in order to ask the woman of the house whether foreign visitors may enter. Then comes the exciting moment when we enter the courtyard: yes, there on the wall stands an atmosfair stove with couscous cooking on it. Even the glass lid is still intact. I remember how the producer told me with pride that they are impossible to break. We check the ID number stamped on the stove, Karunakar asks his questions, but it is clear: incrustated and somewhat dented, the pots sooted and scratched, this stove has been used every day for years."*



The UN auditor monitors whether the wood-burning stoves are really being used.

Source: atmosfair GmbH



Source: atmosfair gGmbH

*Does a wood-burning stove really save 80 % of firewood? And does the food cooked on it taste good? atmosfair project partner at a demonstration in Nigeria.*

## Efficient wood-burning stoves

*The wood-burning stove projects are an important focus of atmosfair because they save more CO<sub>2</sub> per euro contribution money than any other technology. We are already using them to help combat poverty in six countries. However, patience and good sales are necessary in order to overcome the consumers' mistrust.*

Yahaya Ahmed holds up a small bundle of wood and asks the group: do you believe that we can cook enough rice with this bundle to satisfy the hunger of everyone here? "Impossible!" responds in the community centre.

Around 50 men and women have gathered for a stove demonstration in a suburb of the Nigerian city with over a million inhabitants, Kaduna. An emissary of the emir invited them personally. He is highly regarded here: as he gives his welcome speech, three men film every word with their smartphones. Yet most here do not believe that the stainless steel wood-burning stove Save80 requires so much less wood than an open hearth over which food is traditionally prepared in Nigeria. Yahaya Ahmed feeds the wood into the Save80 under the attentive gaze of the community and lights the fire.

### **By now, atmosfair operates five wood-burning stove projects in Africa and India**

Since 2008, the environmental journalist and project partner of atmosfair advertises the wood-burning stoves with such demonstrations. He is largely responsible for the fact that by now atmosfair has supported 40,000 wood-burning stoves in Nigeria, Cameroon, Rwanda, Lesotho, and India, saved 72,000 tonnes of CO<sub>2</sub>, and made the lives of tens of thousands of people a bit better. At the beginning of this realisation, Yahaya Ahmed no longer wished to talk, but rather to act. He had reported for years for the Deutsche Welle about the catastrophically high deforestation rate in Nigeria – between 2005 and 2010 it was the highest in the world according to the UN. He wanted to counteract this, founded the organisation Development Association for Renewable Energies (DARE), and searched for a wood-burning stove that was com-

patible with Nigerian culture and saved as much firewood as possible. In cooperation with the association “Lernen – Helfen – Leben” (learning – helping – living) from Vechta, he finally found the Save80 wood-burning stove.

Compared to an open hearth, the stove saves up to 80 percent of firewood through a sophisticated ventilation system and double-walled insulation. Through this, it helps to avoid deforestation and also helps poorer families in African countries to have a better life, for when they use the stove, they only have to spend 6 and not 30 percent of their incomes on firewood. The production and sale of such a durable, quality product comes at a price, however. In order to sell the Save80 stove at a cheaper price, Yahaya Ahmed approached atmosfair in 2008. After intense examination, we came to the realisation that if the people accept the stoves, they save more CO<sub>2</sub> per euro donated than any other climate protection technology.

#### **How are we changing cooking habits?**

For this reason, we started a pioneering project

together with DARE and LHL. We organised the shipping of the stoves in individual parts to Nigeria, provided them free of charge to DARE, and worked on the project approval according to the CDM and Gold Standard. Perhaps the largest challenge, however, was how to convince people to change the cooking habits they had practiced for centuries and invest money in the Save80. The answer was through hundreds of stove demonstrations, such as the one in the community centre near Kaduna.

After the rice cooked for three minutes, Yahaya Ahmed takes the bowl from the Save80 wood-burning stove and sets it in a heat-retaining box with a lid, the so-called wonderbox. While the rice continues to cook there without using firewood, Yahaya Ahmed shows photos from the villages in northern Nigeria that he has visited. One can see huts and fields that are ever more silted because the bordering forests are being felled and processed into firewood. This is firewood that is being transported by truck to Kaduna as well and sold

### **Almajir Safiyanu from Funtua, Nigeria, on her new efficient stove**

#### **How has the forest land here in the area changed since your childhood?**

Earlier we children could fetch wood from the forest across from our village, but today there is nothing left of it. Instead, the wind always brings new sand that settles on our fields and makes the harvests ever worse. In order to collect wood these days, we must go very far, and for this reason we often buy the wood from traders on the street.

#### **How much money did you spend on firewood?**

A lot! On some days hardly anything was left over in order to buy ingredients for the food at the market. A 100 Naira bundle (around 50 cents) was just enough to cook for one day.

#### **What has changed since you started using the Save80?**

I make do with much less wood. After the harvest I can even use the corncob remains from the field and need hardly any wood to cook. Besides this, the Save80 hardly produces any smoke. When I used to cook, my eyes often watered. That is over now.



*Almajir Safiyanu cooks a traditional Nigerian dish with the Save80*

Source: atmosfair.gGmbH

on many roadsides.

“Can you all remember how much greener it was here before?” Yahaya Ahmed asks the group. Many heads nod. Through his speech, the civil engineer makes it clear to the people that there is a connection between traditional cooking habits and the increasing desertification.

After cooking for 30 minutes, Yahaya Ahmed takes the lid off of the wonderbox. Steam rises, and the smell of the cooked rice fills the room. Bowls are passed around, the women and men try it and realise that it tastes just as good as at home! Now many of them are ready to invest in the Save80 as well as bowls, pans, and a wonderbox. The price is subsidised by atmosfair, and people can choose to pay in installments. After around six months, the stove is paid off. After that, families save money that can be used for other things.

#### Performance monitoring by UN-accredited auditors

Every year, a UN-accredited auditor tests whether the wood-fired stoves are really accepted and used by the people in Nigeria. In addition, the UN distinguishes our stove project as one of just ten CDM projects worldwide because it supports sustainable development to an exceptionally high degree. For this reason we decided to transfer the experience we gained with stove production and models as well as customs authorities and shipping to other countries. Meanwhile, we operate five further wood-burning stove projects in India, Cameroon, Rwanda, and Lesotho.

In 2012 we could make important progress: the UN gave the go-ahead to expand the wood-burning stove project in Nigeria from a regional to a national program – a first for CDM wood-burning stove projects in Sub-Saharan Africa. This allowed us to sell 7,500 additional wood-burning stoves over the last year in Nigeria alone. There was also good news for our wood-burning stove project in Lesotho, Rwanda, and Cameroon: it was officially registered by the UN, meaning it was approved. In Lesotho, we are breaking new ground: together with Deutsche Post DHL GoGreen, we are operating the first ever CDM project there.

## At a glance

**Technology:** efficient wood-burning stoves save up to 80 % of energy

**Local environment:** deforestation and soil erosion are avoided, less smoke while cooking

**Further benefits:** households save money on firewood, local initiatives create jobs and better health

**Project partners:** Nigeria: DARE, LHL, BIA  
Rwanda: ENEDOM, Safer Rwanda, Rwanda Women's Network, UNHCR Rwanda, INYENYERI  
Lesotho: Solar Lights  
Cameroon: Pro Climate Int.  
India: PES

#### Progress:

- Project in Nigeria expanded from regional to national program as the first wood-burning stove CDM in Sub-Saharan Africa
- Projects in Rwanda, Lesotho, and Cameroon are officially approved by the UN
- A further 15,000 wood-burning stoves are sold in total



Source: atmosfair GmbH

The parts for the Save80 stoves arrive in Nigeria and are assembled there.



Source: atmosfair gGmbH

atmosfair employee Mareike Tobiassen tests the efficiency of the pyrolysis stove with local partners in the Sundarbans.

## Pioneering project pyrolysis stoves

*Pyrolysis stoves save CO<sub>2</sub> in two ways: they use less wood and produce charcoal in the process. In the largest pilot project yet worldwide, atmosfair tested the new technology in around 1,000 Indian households.*

The Sundarbans in the eastern Indian state West Bengal, April 2013: At 40° C of humid heat, the boat with atmosfair employee Mareike Tobiassen on board glides by dense mangrove forests. Project partner Moulindu Banerjee directs the boatman purposefully to a peninsula. This is where a family lives that bought one of the 1,000 pyrolysis stoves subsidised by atmosfair. Mareike Tobiassen wants to ask 32 of these households randomly sampled by atmosfair about their experiences with the pyrolysis stove.

This is time-consuming research since many of the customers are only reachable by boat. The Sundarbans is an estuary of the Ganges and three other rivers that is often flooded. At 10,000 km<sup>2</sup>, it makes up the largest block of mangrove forests in the world. Because of the remote location, many families still heat with wood, and this along with several other factors contributes to the reduction of the area of forest land that is the home of the Bengal tigers.

### **Charcoal produces additional income**

The pyrolysis stove offers the opportunity to halve a family's wood consumption and thus save 1.25 tonnes of CO<sub>2</sub> per year. The innovation is that during the pyrolysis to which the stove owes its name, the stove produces charcoal in addition to wood gas, which families can sell in turn. In this way, they receive additional income and in another way, an additional 1.25 tonnes of CO<sub>2</sub> are saved each year (see graphic).

The pilot project was initiated in 2011. At that time, Servals Automation, the manufacturer of the pyrolysis stove, got in contact with atmosfair. We tested the stove extensively, and Moulindu Banerjee from Sapiient Infotech proved to be a very competent and reliable sales partner. For this reason, we concluded a contract in August 2012 with both partners in order to advance this project according to Gold Standard regulations. During the testing phase, we subsidised 1,000 pyrolysis stoves by 50%. This allowed Banerjee to sell the stove to the inha-

bitants of the Sundarbans for 1,000 rupees (around 14 euros).

### Project partner built the trust of the users

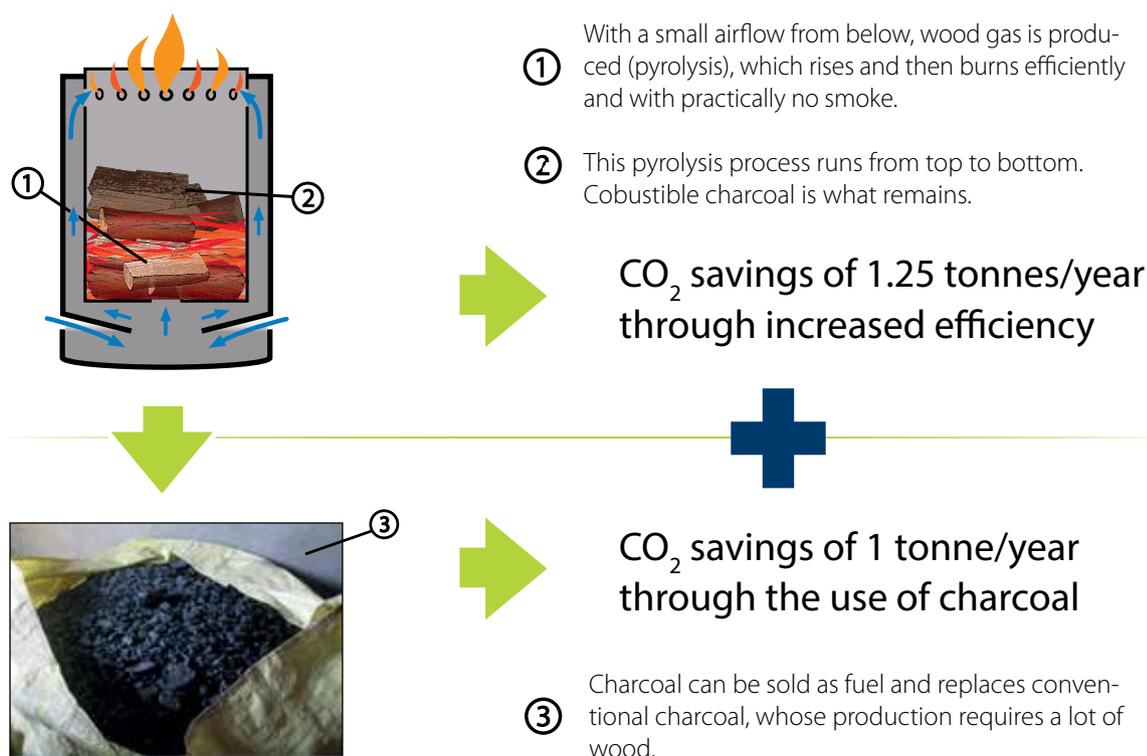
Shortly after the boat reached the shore, Moulindu Banerjee greeted the resident family in Bengali, the local language. The trained market researcher from Kolkata (formerly Calcutta) 60 kilometres away lived in the Sundarbans himself for some time in preparation for the project and knows the local customs and practices. In addition, he and the stove manufacturer Servals Automation included the village inhabitants, local NGOs, and representatives from the local government before the project started – just as stipulated by the Gold Standard. The families' initial scepticism towards the blonde woman from Germany thus disappeared quickly. atmosfair employee Mareike Tobiassen could finally ask the woman of the house in detail about her experiences with the pyrolysis stove stamped number 358.

After three weeks, 32 visits, and the evaluation of all questionnaires and interviews, a positive conclusion was reached: "We could find all of the pyrolysis stoves again. Ninety-six percent of the households use it regularly and are happy with it. The women like it especially because it uses less wood and the

wood gas flame hardly produces any smoke. Now they can even cook in the house during the monsoon season."

The standardised efficiency tests performed on-site also confirm Mareike's expectations about the wood savings and thereby also the CO<sub>2</sub> savings as well as the amount of charcoal produced. A few households already sell it to local customers, for example, to the goldsmith. This allows them to pay off the pyrolysis stove in less than one year. In order to allow the other households to benefit from the charcoal, Moulindu Banerjee will have his sales employees buy it and pick it up and for example, sell it in Kolkata to restaurant owners.

Because of the positive interim result, atmosfair will next subsidise a further 4,000 pyrolysis stoves in the Sundarbans using donation funds. Our goal is to save around 10,000 tonnes of CO<sub>2</sub> each year with this pioneering project.





Source: atmosfair GmbH

*It takes around two weeks for the masons to build a biogas system.*

## Small biogas systems

*atmosfair supports the construction of small biogas systems because they not only help the climate, but also small-scale farmers. Biogas is produced from cow dung and harvest residues, which can be used at the push of a button by farming women to cook.*

Scolastica Nyokabi pushes the regulator down carefully; biogas streams with a hiss from the cooker. Her neighbour Azana Nikuba deftly lights a match. It flickers for a moment, and then blue flames are already climbing from the cooker. This is the moment for which the farming women have long been waiting: from now on, they no longer need to buy any more firewood or breathe in any harmful smoke when they prepare food for their families. Going forward, the fuel for cooking and for the gas lamps will flow at the push of the button from the newly finished biogas system that stands in the courtyard and runs on dung from the four cows owned by the Nyokabi family. The Nyokabis will be able to supply their own energy without connection to power supply going forward thanks to the climate protection contributions from at-

mosfair donors.

### **Over 90 percent of the forests have already been felled**

In front of Scolastica Nyokabi and her neighbour's courtyard lies the rural region of the Nairobi River Basin. Thousands of small-scale farmer families live here, most of whom keep two to six milk cows directly next to their domiciles. Until now, the people bought from sellers who felled trees from the bordering forests. However, they are dramatically overused. Since 1990, the forested area in Kenya shrank from 17 to merely 1.2 percent. According to atmosfair's investigations, every small-scale farmer family in the River Basin burns an average of 10 kilograms of wood daily.

David Karanja looks with satisfaction into the kitchen in which Scolastica Nyokabi places a

headscarf over her new gas stove. The 60-year-old business economist from Nairobi founded the social enterprise Sustainable Energy Strategies (SES) in 2008 in order to do something to counter the rapid deforestation in Kenya. He approached atmosfair and asked for support to construct a large biogas system for agricultural waste. Instead, by now he is inaugurating the 250th household biogas system at Scolstica Nyokabi's at the suggestion of atmosfair employee Florian Zerkawy: "The construction of large biogas systems is technically and organisationally demanding. Because David told us that there are many small-scale farmers around Nairobi, we suggested that he try a technology that we have had very good experiences with in India instead."

#### **atmosfair transfers the technology from India to Kenya**

Since 2008, atmosfair has operated a Gold Standard project in South Indian Kerala in which cow dung is converted into energy. Thousands of biogas systems have come into existence in the courtyards of small-scale farmers since 2006. Since then, the systems saved over 90,000 tonnes of CO<sub>2</sub> and also produced organic fertiliser. This has been tested and confirmed by UN-accredited auditors on multiple occasions. The NGO Action for Food

Production (AFPRO) developed the biogas systems, which were adapted especially to meet the needs of the rural population, and the women's organisation Women for Sustainable Development built and sold them.

David Karanja accepted this suggestion and got in touch with AFPRO in 2010 after being put into contact by atmosfair. After that, the Indian NGO sent its experienced employee Sam Palwe to Kenya. For four months, he taught masons to build the systems independently, creating jobs by helping them to help themselves.

Together SES and AFPRO built 40 systems in the test phase. In the last two months, Scolastica Nyokabit saw with her own eyes exactly how this works. A trained mason and two helpers dug a hole in her courtyard, built a so-called reactor with bricks, and plastered it with cement.

Finally, the three cubic metre gas-producing system was filled with the dung of four cows, water, and harvest residues. After one month, the biological fermentation process had started up. As of recently, biogas is created on a continuous basis that is routed directly into the Nyokabis' kitchen.

#### **TÜV tests the systems' quality onsite**

In order to guarantee this, atmosfair employee Florian Zerkawy and an auditor from TÜV Nord

## David Karanja on the biogas system project

### **Why are you and your enterprise Sustainable Energy Strategies involved with operating small biogas systems in Kenya?**

Because they help to halt deforestation and produce organic fertiliser at the same time. Artificial fertilisers have already acidified much of the soil here.

### **How was the cooperation with the Indian NGO AFPRO?**

AFPRO brought over a good technology that is capable of making biogas systems popular in all of East Africa. Thanks to a four-month-long training, we can now build the walls ourselves.

### **What kind of feedback do you get from users of the biogas systems?**

They are especially pleased that cooking doesn't produce smoke anymore. Many say to their neigh-

bours "we've left the smoking compartment."



*The 60-year-old business economist (left) has been a project partner of atmosfair since 2010.*

Source: atmosfair.gmbh



The dung of three cows suffices to replace around 10 kilograms of firewood daily.

Source: atmosfair gGmbH

travelled to Kenya in 2011. They tested if the workmen are sufficiently qualified and the materials used are of good quality. They also used a gas meter to check if the systems are leak-proof and really produce as much biogas as indicated. The TÜV auditor finally attested that what functions well in India also works in Kenya. A single system saves four tonnes of firewood per year, which is the equivalent of five tonnes of CO<sub>2</sub> on average. In addition, the system produces fertile manure that the small-scale farmers can use in tilling the land.

In spite of these many advantages, building new systems in Kenya proceeded more slowly than expected in 2012. The price originally calculated for a system increased to 800 euros because bricks and cookers became less accessible. For this reason, atmosfair began a cooperation with Grüner-Strom-Label e.V. Since March 2013, the company contributes an additional 100 euros on top of the 100 euros with which atmosfair subsidises each system. In addition, David Karanja has halved the amount of the first instalment that the interested parties must pay from 160 to 80 Euros.

**Systems are subsidised by 200 Euros and financed with microcredit**

Since then, demand has grown appreciably. The additional support also convinced Scolastica Nyokabi. She joined forces with four of her female neighbours, and together they concluded a loan agreement with "Micro Africa," a trustworthy microfinance institution. The five women each had a biogas system built in their

courtyard and each vouches for the others in paying the loan back punctually. This model produces social pressure because none of these women want to let their neighbours down.

In the long run, the systems are profitable for households. By saving firewood, the system pays for itself after around three years. After this, families have more money than they did before. They already benefit from the progress made by cooking with biogas instead of over an open fire. This means more time spent with family and less harmful smoke.

Due to the positive experiences with the project in Kenya, atmosfair is currently speaking with project partners from Nepal in order to develop a biogas system project there as well. An idea that will also be pursued is to integrate sanitary facilities into the concept in order to create additional benefits for the people.

## At a glance

- Technology:** fermentation of cow dung and harvest residues to biogas
- Local environment:** deforestation and soil erosion are reduced, less smoke
- Further benefits:** users can supply their own energy, jobs for masons created
- Project partners:** India: WSD, ADATS  
Kenya: AFPRO, SES

**Progress:**

- 130 total systems newly built in Kenya
- Cooperations with Grüner-Strom-Label e.V. to accelerate further building

## Typical progression of a CDM Gold Standard project

Your climate protection contributions are at the start of every atmosfair project. At the end is the corresponding amount of CO<sub>2</sub> emissions. In between, 24 months can elapse. That is because we let our projects go through a rigorous certification process according to the UN standard Clean Development Mechanism (CDM) as well as the Gold Standard, which was developed by environmental NGOs. This graphic shows what that means concretely.

### PHASE I: Planning (3 months)



- |   |  |  |  |
|---|--|--|--|
| 1 |  |  | atmosfair tests the project idea according to demanding criteria   |
| 2 |  |  | atmosfair concludes a project agreement with the project partner   |
| 3 |  |  | atmosfair produces a project plan (PDD) and consults with the local population as well as other parties concerned (stakeholder consultation) |

### PHASE II: Approval (9 months)



- |    |  |  |  |
|----|--|--|--|
| 4  |  |  | The host country approves the project  |
| 5  |  |  | The auditor tests the project plan and provides comments (validation)                                      |
| 6  |  |  | atmosfair releases the agreed funds; the project partner begins to implement the project                   |
| 7  |  |  | atmosfair integrates the auditor's comments and those of the other parties concerned into the project plan |
| 8  |  |  | The auditor produces a validation report on the project  |
| 9  |  |  | atmosfair submits an application for approval to the UN  |
| 10 |  |  | The UN tests the application and approves the project (UN registration)                                    |
| 11 |  |  | atmosfair submits an application for approval to the Gold Standard Foundation                              |
| 12 |  |  | The Gold Standard tests and approves the project (Gold Standard registration)                              |



### PHASE III: Operation



- |     |  |  |   |
|-----|--|--|---|
| 13  |  |  | The project partner fully implements the project together with atmosfair; atmosfair documents and monitors the emissions savings produced |
| ... |  |  | The auditor checks the actual emissions savings and produces a report on this (verification)  |
| 24  |  |  | The UN checks this report and issues CO <sub>2</sub> certificates to atmosfair  |
| ... |  |  | atmosfair decommissions these CO <sub>2</sub> certificates permanently with the German Emissions Trading Authority (DEHST)                |

■ Work performed by atmosfair/project partner    ■ Work performed by auditor

## Bolivia: electricity from Brazil nut shells

It is an atmosfair pilot project with enormous potential: in March 2012, the first wood gasifier power plant in South America located in the northern Bolivian border town of Cobija delivered electricity for around 1,000 households. In fact, it came from Brazil nut shells. A delegation from Nicaragua promptly visited to see the technology. "This new type of power plant offers the chance to provide electricity from organic waste to many remote Amazonian villages. Scrap wood from sawmills is also a possibility for this," explains atmosfair project supervisor Robert Müller.

### Pilot project for all of South America

The project goes back to an idea of atmosfair project partner Tahuamanu. In his factory, around 100 employees crack Brazil nuts from the Amazon and pack these for export, leaving behind mountains of Brazil nut shells. This is a waste product with an outstanding caloric value that Tahuamanu wanted to convert into electricity, not least because there are frequent power outages in the remote region. In 2009, Tahuamanu and atmosfair got into contact. In Burkina Faso, we already had gathered experience with wood gasification. Thus, we presented the technology from Indian manufacturer Ankur to Tahuamanu.

As is usual with Gold Standard projects, atmosfair spoke with many people who are directly or indirectly involved in the project during so-called stakeholder talks, including with employees of the state-run power authority. "At that time, the authority employees assured us their full support of routing the electricity into the local electricity grid," said Robert Müller.

### Unexpected difficulties

However, now that the wood gasifier plant is ready for operations, the authority has backed away. Similarly to Hugo Chávez before him, Bolivian president Evo Morales wants to nationalise the entire energy supply. For this reason, the green electricity from Tahuamanu's private company cannot be routed into the electricity grid, although it is urgently needed.

However Tahuamanu is not giving up; he is working on an alternative solution. The engineers want to directly connect the Brazil nut factory to the power plant. Because the factory's energy needs fluctuate, automated control engineering

and perhaps a buffer tank are needed. atmosfair is ready to provide technical help if needed because we continue to believe in this technology.



Source: atmosfair gGmbH

*Before a waste product, today a supplier of electricity: mountains of Brazil nuts shells in Cobija, Bolivia.*

### At a glance

**Technology:** gasification of wood-like harvest residues

**Local environment:** replacement of fossil fuels, fertiliser

**Further benefits:** Job creation in agriculture, transport, and the technical maintenance of the plants

**Project partners:** Tahuamanu, Brazil nut exporter

### Progress 2012:

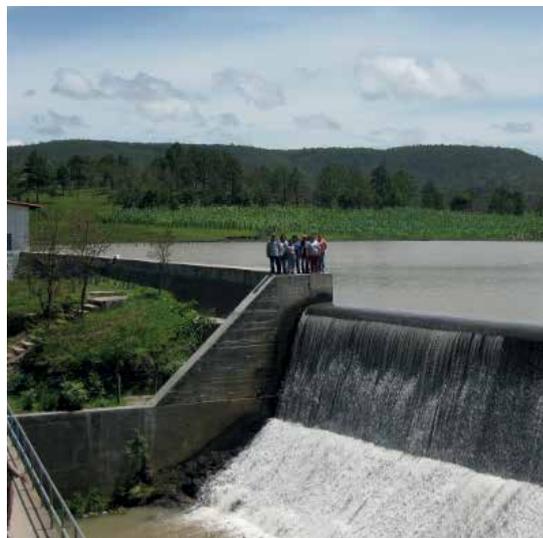
- Plant began operations
- Interest from Nicaragua in adapting the technology

## Honduras: electricity from hydropower

The hydropower plant near La Esperanza in Honduras has been reliably delivering electricity since 2005. This most “senior” atmosfair project provides a remote region with green electricity that was formerly predominantly dependent on electricity from diesel generators.

atmosfair supports the small 13.8 MW power plant of project partner Consorcio de Inversiones S.A. (CISA) because it hardly affects the environment. The reservoir is comparatively small. With the support of atmosfair, CISA provides four surrounding villages electricity and has created 71 jobs. In the course of the 2009 financial crisis, however, the small company ran into difficulties because it could no longer service its debt completely.

atmosfair stepped in with advance payments for future CO<sub>2</sub> reductions. This trust has paid off. In the meantime, the company is economically sound and has paid atmosfair back fully in CO<sub>2</sub> certificates. Thanks to this long-term view and the funds from atmosfair donors, the hydropower plant has thus far saved 142,000 tonnes of CO<sub>2</sub> since 2005. This was tested by independent UN auditors, who last con-



Source: atmosfair gGmbH

*Ecologically sound electricity from hydropower.*

firmed the plant’s smooth operation in the beginning of 2013. Together with atmosfair, CISA is now planning another small hydropower plant with a capacity of 4 MW.

## South Africa: wind energy

atmosfair project partner Hermann Oelsner fought with the authorities for 12 years before he was able to open the first wind park in all of South Africa. It lies in Western Cape, around 70 kilometres north of Cape Town.

The conditions for eco-friendly wind power in Western Cape are good. A strong wind blows over the former pasturelands, and people, animals, and forests are not affected here. For this reason, atmosfair supported the Oelsner Group in planning 16 further wind turbines that together will produce around 22.5 MW of green electricity.

In 2011, we financed an environmental impact assessment with the prospect of an additional feed-in tariff that would make the project profitable. However, South Africa’s energy policy is unreliable. Although the government introduced a feed-in tariff for renewable energies in 2009, in the meantime it has been rescinded. Instead, a bidding system has been introduced.

Its implementation will be very bureaucratic and

require overcoming high hurdles. However, Hermann Oelsner is not giving up. Currently, he is negotiating with the provincial government of Cape Town about supplying the electricity to the local grid.



Source: atmosfair gGmbH

*Soon, 16 wind turbines will stand here.*

## Saving energy at schools

Whenever someone walks through the halls of the Lilli-Martius-Schule in Kiel, a light turns on by itself because motion detectors operate the energy-saving light bulbs on the ceiling. If someone opens a door and looks into the classroom, one can often see teachers and pupils thinking about climate protection, not just about energy-saving lamps, but also about proper ventilation, less water consumption, and about a green IT concept for the whole school. Not only did the pupils implement all of this together and save a lot of energy in the process, but they also wrote a book and made a website on which "Nelly the little whale" encourages other pupils and teachers to reduce energy consumption as well. It can be downloaded and includes worksheets.

### Since 2009, atmosfair supports energy-saving champion schools

The expert panel of co2.online's nation-wide competition school judged exemplary commitment to climate protection. In May 2012, they selected the Lilli-Martius-Schule as one of the ten "energy-saving champion" schools. The school could also rejoice over 1,500 euros in prize money from at-

mosfair. With the money, the pupils printed an informational brochure on electrical waste and procured new plants for the two school biotopes.

atmosfair has supported the yearly competition every year since 2009. In 2012, over 150 schools participated. We do not credit ourselves with the CO<sub>2</sub> savings that come from this. Rather, it is an investment in the future. As atmosfair project supervisor Maren Kügler explains, "It is simply important to share with children that climate protection is fun and that they can pursue it in their immediate surroundings."

Pupils and teachers from the THEPRA-Förderzentrum in Bruchstedt in Thuringia were also happy to receive 1,500 euros in prize money. The school, which focuses on intellectual development, won the title of energy-saving champion because the school management and engaged teachers have been anchoring environmental and climate protection into everyday school life for the past 14 years. The school installed a solar power system, and pupils documented its yield daily. In the classrooms, air quality traffic lights show when it is time to ventilate the room, and interval water faucets reduce water consumption. With the prize money from atmosfair,



Source: atmosfair GmbH

They are recognised as the energy-saving champions: pupils of the Lilli-Martius-Gemeinschaftsschule in Kiel.

Source: atmosfair.gmbh



*With the luxmeter, this energy detective is on the trail of energy wastage.*

the school would like to implement further energy-saving projects.

### **Climate education at schools: the fifty-fifty project**

Furthermore, in 2012, atmosfair once again supported a professional energy consultancy at four schools as part of the fifty-fifty Initiative. It is carried out by the Independent Institute for Environmental

Issues (UFU).

In this, the school organises student companies or project days during which the topic of energy saving is covered in the curriculum. Afterwards, an energy expert comes to the school and brings a luxmeter, thermostat, and other measuring tools. With this, the pupils can measure the energy requirements themselves. Then, the energy expert shows how this can be reduced: the heating thermostat can be consistently lowered during the night, on the weekend, and during holidays. Ventilation should only take place intermittently instead of using a tilted window. The expert discusses sensible light switching in the stairwells with the maintenance supervisor, reduces the light to prespecified levels, and initiates additional activities.

Subsequently, the participating schools used an average of 8,000 kWh less electricity. And the best thing about it that gives it the name fifty-fifty: the school authorities pay half of the saved school costs back to the school: on average, this is 5,000 euros more in the school's coffers.

## **Tanzania: waste avoidance**

It really is a stinky traffic jam: around 60 trucks brimming with trash wait with chugging motors in front of the Pugu landfill at the edge of Dar es Salaam. It moves forward at a snail's pace because a wheel loader is broken. Otherwise, it makes room for ever more truckloads full of waste from Tanzania's pulsing capital city.

However, the defective wheel loader is not the only problem in Pugu, reports atmosfair employee Xaver Kitzinger after his trip to Tanzania. "All of the waste of this metropolis is dumped here willy-nilly. This pollutes the ground water and the surrounding communities."

### **atmosfair tests if waste can be avoided**

Together with atmosfair, the city of Hamburg would like to help get this problem under control. As part of a city partnership, Dr. Stefan Lübben, a compost expert from the Hamburg's waste management, travelled repeatedly to Dar es Salaam as of 2009. He taught employees from the city administration and discussed possible cooperations in the area of waste management with politicians. However, the inertia



Source: atmosfair.gmbh

*Waste collectors at the Pugu landfill in Dar es Salaam.*

in the metropolis of three million people is immense. Several attempts, including by the World Bank, have already failed. For this reason, the city of Hamburg commissioned atmosfair to conduct a feasibility study at the beginning of 2013. The task was to find out how and with which partners it would be possible to implement a climate protection project in the area of waste management. If the results are positive, the Hanseatic city would like to compen-



Source: atmosfair gGmbH

*Until now, these cornhusks rotted in big landfills. In the future they will be purposefully composted.*

sate the business trips of its administrative staff. atmosfair employee Xaver Kitzinger took on the feasibility study. The experienced project manager lived for three years in Sierra Leone and South Africa and already gained experience with waste avoidance projects there. After intensive prior research, he travelled together with Stefan Lübben, Florian Kölsch, and Dietrich Brockhagen to Dar es Salaam in April 2013.

**The goal: to compost 50 tonnes of biomass daily**

To start, they experienced the situation with their own eyes. If the waste were sorted in advance and only that which was really not possible to reuse was dumped there, it would reduce the burden on the Pugu landfill considerably. This is because the 60 trucks that were sitting in a traffic standstill in the brutally hot East African midday heat loaded up to 60% biomass. The atmosfair travel group visited the source of this biowaste: a large market in which hundreds of vendors on three floors sell fruit, vegetables, and meat. At the end of the market day, around 20 tonnes of biomass waste remains: rotten vegetables, cornhusks, coconut shells. This biomass could be collected by type without a lot of effort.

In the future, two to three such markets can bring their entire waste 10 kilometres to a new composting plant instead of 30 kilometres to Pugu. atmosfair employee Xaver Kitzinger sees more potential in this climate protection option than in upgrading

the Pugu landfill. Up to 50 tonnes of biomass can be composted each day in such a plant. In the first place, it will prevent the creation of environmentally harmful methane. It will also allow the operators to sell the compost that is created as fertiliser to farmers. atmosfair project partner BORDA has already successfully built such a composting plant in Indonesia. BORDA would also be available as an experienced and reliable implementing partner, which is a critical requirement for the success of such a project.

For this reason, Xaver Kitzinger saw good prospects of implementing the project. "The city administration of Dar es Salaam has strong motivation to participate because they would save a lot of money for fuel if the waste trucks no longer had to drive so far. Besides this, it would create jobs and support agriculture. Also, BORDA has the necessary experience to find a local partner to run the composting plant." Now it is up to the city of Hamburg and its partner city Dar es Salaam to decide whether the project is implemented.

## Climate-friendly air conditioners

In many tropical or subtropical countries, air-conditioned hotel rooms are a welcome chance to cool off. On the other hand, conventional air conditioners use so much energy that they are one of the biggest causes of CO<sub>2</sub> emissions in the tourism industry after air travel. Within a pilot project, atmosfair would like to help solve this dilemma for sweaty travelers with a green conscience.

### Coolness from sustainably harvested biomass

The idea is based on the positive experience that we have had with biomass boiler projects in Sri Lanka and Burkina Faso. Together with the independent engineering firm GET, we would like to transfer this technology to hotel air conditioners. In this, we attach great importance to obtaining the biomass in a sustainable way. "Up until now, in many Asian countries, residues from the rice harvest, for example, are disposed of without being utilised. In the future, nearby hotels could use these crop residues to cool hotel rooms," says atmosfair project supervisor Christian Richter.

In this process, the biomass would be burned and transformed into cool air with the help of a so-called absorption refrigeration system. A hotel in Switzerland has already successfully shown that the combination of these two tried and trusted



Source: atmosfair gGmbH

The climate-friendly air conditioners are based on the biomass boilers with which atmosfair already has experience from a project in Sri Lanka.

technologies works. Here, the green energy from the boiler was also enough to heat the water for all of the showers, sinks, and laundering of a hotel. According to atmosfair's calculations, biomass air conditioners can cover 80 percent of a hotel's energy needs in this way. In addition, the system even saves the hotel manager money in the medium term – provided that sustainably sourced biomass is available.

### atmosfair funds a feasibility study

Some hotel owners who are so inclined may now ask: if this solution has so many advantages, then why is it not on the market yet? As in so many things, the devil is in the details. "In the first place, no one has experience with hotels building a transport chain for the biomass and storing this in a way that saves space. We want to generate new knowledge about this with a feasibility study. We would also provide technical and financial support in the planning and implementation stages," explains Christian Richter.

It would not be the first time that atmosfair helped an innovative technology to achieve a breakthrough. For example, in Bolivia we enabled our partner to begin running the first big wood gasifier plant in South America.

### Invitation to hotels

*Are you the owner of a hotel and interested in updating your air conditioning? Use the opportunity to convert your hotel to use green energy sourcing with the help of a climate-friendly biomass air conditioner that even saves costs in the medium term. atmosfair would like to support this technology out of conviction for rigorous climate protection. For this reason, we are inviting hotels to apply for a free feasibility study. The winner of the study is under no obligation to implement the project. You can receive further information and documents for participation by request via e-mail to: [info@atmosfair.de](mailto:info@atmosfair.de)*



Not a summer fairy tale, but reality: our poster campaign with Sönke Wortmann and many other celebrities was awarded the Airport Media Award.

## “Better this way than not at all”

*Director Sönke Wortmann flies atmosfair, and not just on the promotional poster.*

**Mr. Wortmann, you have good relations with the DFB through your film “A Summer’s Tale” from the 2006 World Cup. How green is the DFB?**

The DFB has recognised the signs of the times and is aware in many ways that it sets an example as the biggest sports association in the world. This includes topics such as integration, homosexuality, and now also the topic of the environment. For this reason, I gladly accepted the offer to film an environmental advertisement for the DFB with the national players Sven and Lars Bender.

**At the women’s world cup in 2011 in Germany, atmosfair compensated the CO<sub>2</sub> emissions for a huge football event for the first time. As someone who advertises for atmosfair, did you put in a good word for us?**

No I didn’t, but I like the concept of atmosfair compensating the carbon footprint that one leaves through travel. Of course critics say that one can buy oneself out of a guilty conscience, but better this way than not at all. When atmosfair enquired if I would participate in a poster campaign two years ago, you were kicking at an open door. I am asked relatively often whether I support things, but I try to do this in moderation so that the things that I represent are more credible.

**Did you have a special experience that inspired you to get involved in environmental issues?**

I have been a member of the Green Party for 20 years, but as a rather passive member because I work a lot and don’t have as much time as I’d like.

**Travel educates, but long flights harm the climate. How do you deal with these conflicting goals?**

I fly much less than I did earlier and mostly take the train within Germany. Besides this, I also travel for business a lot and for example will need to fly to Brazil soon. Naturally, I’m not travelling by ship because otherwise I would arrive too late for work. I also don’t find it reprehensible to fly to China to expand one’s horizons. In the end, it is important that the net CO<sub>2</sub> balance is right. In this area, I think I’m pretty good.

**And when you do fly, then with atmosfair?**

At the beginning of the New Year, I add up my travel and make a contribution to atmosfair in order to compensate the damage I have caused. I would be happy if other people would do the same.

## More climate protection in travel agencies

Whoever books a holiday on the Internet will meanwhile be asked on the websites of many tour operators: would you like to compensate your flight with atmosfair? However, around 70 percent of Germans book their holiday travel in the traditional way using travel agencies. Up until now, only in exceptional cases do travel agents point out that customers can compensate the climate damage that results from their trip.

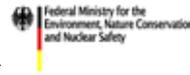
### Raising consciousness about the climate impact of flying

With our project "Green Counter," we are working together with German Watch on behalf of the Federal Environment Agency to change this. We are coordinating with IT service providers in the travel branch to develop solutions for how to integrate atmosfair's

services in the booking software of many travel agents. The CO<sub>2</sub> emissions of rental cars will

also be included going forward. In addition, we developed an e-learning module that can teach travel agents about the climate impact of air travel. Our first success is in the travel agencies of the Lufthansa City-Center Group, where the customers are already asked if they wish to fly with atmosfair. Other travel agencies are to follow in the time up to the ITB travel trade show in March 2014. We also plan a website and seal of approval for sustainable travel agencies.

This project is supported by:



**Umwelt  
Bundes  
Amt**  
Für Mensch und Umwelt

## atmosfair award for tour operators

Since 2010, we recognise environmentally conscious tour operators that are especially successful in making their customers aware of CO<sub>2</sub> compensation with atmosfair. This year, first place goes once again to last year's winner "Island Erlebnisreisen." A record-breaking 72 percent of customers wanted to experience the beautiful nature of Iceland and Greenland without harming the climate and compensated their flight. "Vamos-Eltern-Kind-Reisen" defended second place with a compensation quota of 27 percent. The bronze went to the newcomer "Frosch Sportreisen," which had a quota of 14 percent. In addition, we want to give praise to "NEUE WEGE-Reisen." This tour operator performed best among the German members in the "forum anders reisen."



### Markus Hegemann, NEUE WEGE-Reisen

#### Why is CO<sub>2</sub> compensation an important topic for you as a tour operator?

Our slogan is "Travel conscientiously, healthily, and naturally." For this reason, we would like to minimise the impact of travel. Climate compensation with atmosfair offers a good opportunity for this."

#### What do you do to make your customers aware of atmosfair?

For the last five years, we point out the opportunity to form a "climate protection agreement" with our customers booking online or by phone. This means that we contribute half of their atmosfair contribution on top of what they donate. In addition we completely compensate all of our employee flights.



Source: apops - Fotolia.com, jelwolf - Fotolia.com

*Videoconferences or switching to the train: these are just two of many possible ways to save costs and CO<sub>2</sub> emissions created by business travel.*

## **Climate check for companies**

*Increasingly, investors and customers are paying attention to sustainable business management. atmosfair offers companies solutions for capturing and reducing the carbon footprint of their business trips. This is good for the environment and for the company's customers and moreover saves costs.*

Innovation and sustainability – these are the two main focuses of A.T. Kearney. Just recently, the management consultancy helped an automobile manufacturer to revise the sustainability guidelines for its suppliers. In the end, through better logistics, among other things, the producer could save CO<sub>2</sub> as well as costs. However, as a management consulting firm active globally, A.T. Kearney itself also produces CO<sub>2</sub> – namely, predominantly through business trips. The approximately 1,300 employees in 39 countries are often travelling. In order to become a pioneer itself, A.T. Kearney set a goal in the year 2007 to reduce its own CO<sub>2</sub> emissions by 20 percent and to compensate the portion that was not possible to avoid. Shortly thereafter, the management consultancy approached atmosfair.

### **atmosfair consults to optimise business travel**

„We analysed the market and as a result, chose atmosfair as the appropriate partner to calculate the CO<sub>2</sub> emissions of our business trips,” explains A.T. Kearney Managing Director Central Europe Martin Sonnenschein as the reason for cooperating with atmosfair.

Since then A.T. Kearney really was able to reduce its CO<sub>2</sub> balance by 20 percent through a set of measures – and on top of that lowered travel costs. The savings were so big that only a tenth of it needed to be invested in compensation for the remaining emissions.

However, not every company travels the way A.T. Kearney does. Business travel realities vary widely depending on the size of the company, the branch, and the markets. For this reason, atmosfair has developed a consulting approach that records the initial situation individually and based on this, develops measures of varying scope with the companies. The consulting takes place in a form of the customer's choosing, ranging from a desk report up to a multi-stage process in the company with communication, implementation, and evaluation of the measures.

### **The basis of CO<sub>2</sub> reporting**

The basis brings together and prepares a report that compiles all the CO<sub>2</sub> emissions from business trips, from train travel to rental cars to flights and hotel stays. In collaboration with the Verband Deutsches Reisemanagement (VDR), atmosfair developed a

method in 2011 that records business trips worldwide and is precise enough to use in order to derive effective measures. It uses the data that travel agencies record.

“You can only control that which you can measure.” To whichever country your employee travels, atmosfair can capture all flights according to the VDR Standard and differentiate them by airline, flight number, and flight class. The CO<sub>2</sub> emissions for an oft-flown route can vary by airline by as much as 50% or more. If big companies take this into consideration for their most often flown routes and consciously choose the most efficient airlines, there are often financial advantages that the company can also pass on to the employees. atmosfair also evaluates the type-specific CO<sub>2</sub> balance of rental cars as well as booked train trips and hotel rooms for the 40 most important business travel countries.

### Convincing reports without effort through travel agencies

For companies that book their trips using a travel agency or pay using a travel credit card, atmosfair can produce a CO<sub>2</sub> report without the company needing to collect the data itself. atmosfair is partnering on this together with the most important travel agencies and credit companies. The CO<sub>2</sub> reports come as a PDF document with preset

evaluations as an XLS file for the company’s own evaluations.

### Saving CO<sub>2</sub> and costs: consulting offer

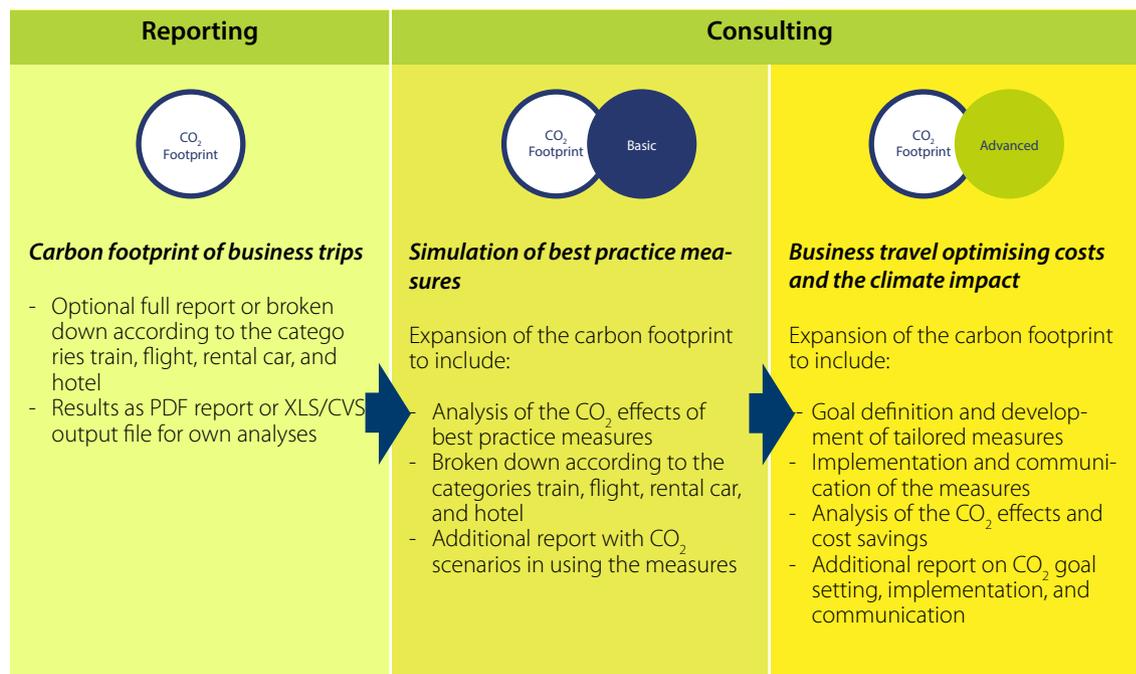
Consulting is Bernd Becker’s job. Previously, the atmosfair consultant advised companies in Germany and Australia on sustainability issues.

For atmosfair, he advises mid-sized companies and groups. “Together with our customers, I develop customer climate goals and identify concrete measures to optimise CO<sub>2</sub> and costs,” says Becker.

### Communication doesn’t always mean travel

From a climate perspective, the best business trips are those that don’t take place at all. After thorough analysis, A.T. Kearney found out how this is possible without sacrificing quality in work results. For this, local employees were more often used for projects and meetings were replaced with videoconferences. Within Europe, the consultants started to use the train more often instead of the airplane. atmosfair can show you how much of this is possible to achieve in your own company.

A clue lies in the question of why employees travel and to whom. This is a question that very few travel guidelines ask. Depending on the occasion and other circumstances such as number of participants, familiarity with the topics and par-



We capture the carbon footprint using the VDR standard developed by atmosfair – the only one that is exact enough to precisely identify CO<sub>2</sub> reduction measures.

ticipants, complexity, etc., typical communication events often work themselves out. An employee from an engineering firm who needs to redesign a turbine, a sales employee who presents products to customers, or an employee who needs to come to an agreement on the documentation of a new product series: all demand different types of onsite presence depending on the different circumstances. In this, there have been good experiences that employees and customers value. The younger generation especially often prefers to be at home on a Friday evening than to use a bonus miles card in Shanghai. atmosfair helps with the analysis and recommends incentive systems to change behaviour within the company that can be integrated into the travel guidelines.

## Travel guidelines optimised by measures

The following points are examples of measures that can be revealed when a company systematically analyses its occasions for travel and adjust the travel guidelines:

- Recording of occasions for travel
- Videoconference points instead of bonus miles
- Adjustment of booking class according to flight distance
- Own Bahncard 100 instead of a company car
- Own Bahncard 50 for every employee who makes more than three trips per year
- Vouchers for the dining car
- Night train instead of flight and hotel
- Choosing the most efficient airlines to the most frequent destinations
- Location for meetings and events that is optimal for the environment

## Climate check for airlines

If all went according to the CO<sub>2</sub> label for automobiles, even the Leopard 2 tank would be relatively environmentally friendly. In the controversial efficiency ranking, an automobile's fuel consumption is determined in relation to its weight. The paradoxical result is that small cars that do not even use 5 litres to go 100 kilometres end up in efficiency class D. Some heavy SUVs, that can use double the amount of fuel, can boast CO<sub>2</sub> class B.

### The Airline Index increases transparency

In contrast, atmosfair is absolutely incorruptible when it comes to the Airline Index, the first climate ranking for airlines. In 2011, we meticulously compared the 130 worldwide largest airlines with regard to their CO<sub>2</sub> emissions per passenger for the first time. Using computer models, we examined how much fuel the jets that were utilised by each airline employed and used a series of specialised data services in order to determine how well utilised the seating and freight capacities were. The astounding result is that on the same route, one passenger that books

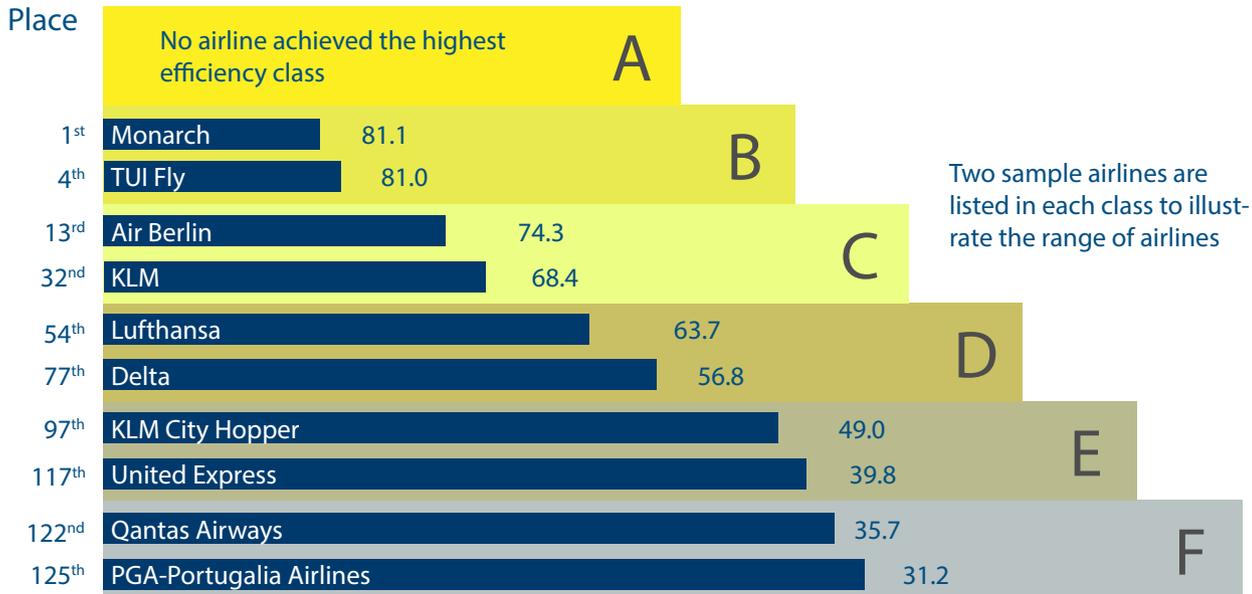
using an efficiency class B airline sometimes uses just half as much kerosene as one who flies with climate class G. For this reason, the results of our Airline Index are a good guide for climate-conscious travellers and for travel managers of companies that wish to reduce the carbon footprint of their business trips. The Index is also an incentive for airlines to become more efficient. It is also the Index that solely and exclusively emphasises climate protection.



The atmosfair Airline Index provides guidance for climate-conscious air travellers and companies.

Source: atmosfair gGmbH

## atmosfair Airline Index 2012



### How do airlines win?

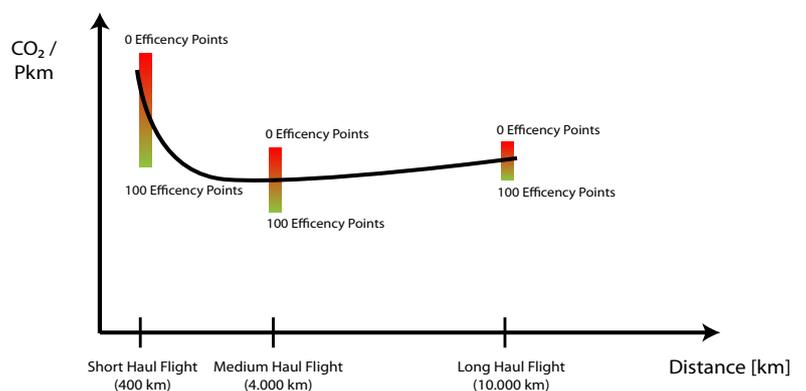
#### Rank 4: TUIfly (Class B)

TUIfly reached 81 of 100 possible points because the airline employs efficient aircrafts of the type B737-800. The seating is almost maximised, and in addition, the flights have a high occupancy.

### Calculation method

Short-distance flights clearly create more CO<sub>2</sub> per kilometre flown than middle-distance flights. This is due to the fact that a plane's takeoff and ascent into the flight level especially consumes a lot of kerosene. The CO<sub>2</sub> values increase again with long-distance flights. The aircrafts are heavier because they must carry along more kerosene in the tank. The atmosfair Airline Index awards 100 points on each of these routes for optimal efficiency and thus makes the airlines comparable.

#### Kerosene use over short, middle, and long-distance routes





Source: atmosfair gGmbH

## Financial report

At around 3 million euros, revenues in 2012 were lower than in the record year 2011; however, they were still higher than the revenues earned in 2010. atmosfair did not receive any public subsidies. Except for the support from the Federal Ministry for the Environment for climate protection in travel agencies, which began in 2011. With just one investor, who contributed over 10% of profits (DHL), the non-profit limited liability company remained financially independent.

Since 2007 revenues from economic business operations have been added on top of the contributions. The profits generated this way pay for part of the costs of the non-profit part of atmosfair. In this way the administrative component could once again be kept under 10% of costs. Out of 100 euros, 91 euros went to the purchase of technologies as well as to the planners and operators of the climate protection projects in the developing countries; atmosfair used just 9 euros for its own personnel for customer support as well as for other costs such as IT, bookkeeping, public relations work, rent and credit card fees.

### Organisation

Stiftung Zukunftsfähigkeit based in Bonn continues to be the sole partner of the atmosfair gGmbH. The four-person advisory board, consisting of two representatives of the German Federal Ministry for the Environment and two representatives from environmental organisations, approved the climate protection projects. None of the persons in these bodies received compensation or reimbursement for this.

The fiscal authority certified the non-profit limited liability company's tax exemption for 2012. For the climate protection contributions received in 2012, the non-profit GmbH issued the donation certificates at the beginning of 2013 in due form.

### Financially independent

atmosfair financed itself in 2012 solely through donations and revenues from economic business operations. The latter is allowed to a limited extent within a non-profit organisation. atmosfair did not receive any public subsidies and is thus financially independent. The sole partner Stiftung Zukunfts-

fähigkeit did not pay any money to atmosfair in 2011, and neither did atmosfair pay any money to the foundation.

### Profits and expenses

In 2012, contributors paid nearly 3 million euros in climate protection contributions to atmosfair. The largest expenses are the payments to climate protection projects. These include costs for the purchase of technologies (e.g., stoves), project set-up and operation, including the TÜV audit and other UN-approved auditors as well as the personnel abroad for the projects. In total, atmosfair spent around 2.5 million euros on this.

Furthermore, atmosfair built up financial reserves in the amount of approximately 1 million euros for the agreed-upon payments in project contracts in the coming years. These will be distributed gradually over the next years when the contractually agreed upon payments from atmosfair are due to the climate protection projects.

In addition there were personnel costs for the atmosfair office in Berlin for project planning and supervision that amounted to almost 120,000 euros in 2012. Thus the climate protection projects benefited from over 2.7 million euros altogether in 2012. In total, atmosfair contractually promised project operators close to 10 million euros in development funds by 2020. Thus atmosfair has more

contractual obligations than reserves.

With this, the expenditures in 2012 were so high that atmosfair could only build the minimum amount of reserves required for future obligations in currently operating projects in the amount of just under 9,000 euros. These reserves for the climate protection projects amounted to nearly 5 million euros. This approach is necessary for climate protection projects that have a duration of 10 years. In this way, contributions in the coming years will be used in order to satisfy existing contracts. Besides these reserves atmosfair is also building reserves to help pilot projects get off the ground.

### Salaries in line with the TVL rate

Besides the climate protection projects, personnel expenses were the second largest cost factor. atmosfair employees earn salaries in line with the public service sector rate of the states (TVL, currently level 11).

The total general administrative costs for telephone, postage, insurance, and office supplies amounted to about 30,000 euros. 26,000 euros went to the rent. Furthermore atmosfair must pay the costs for credit card fees and payment services. These are necessary in order to account for the incoming online payments and transfer them to the atmosfair account. In 2012 nearly 13,000 euros were used for this purpose.

### Balance sheet of atmosfair gGmbH

31.12.2012			
Assets	€	Liabilities	€
A. Fixed assets	8,194.00	A. Owner's equity	6,582,663.74
I. Intangible assets	653.00	I. Subscribed capital	25,000.00
II. Tangible assets	7,541.00	II. Reserves for statutory purposes	
		- Short-term reserves for climate protection projects	4,975,207.00
		- Free reserves (may also be used for climate protection projects)	1,582,456.74
B. Current assets	7,821,856.74	B. Provisions	10,582.63
I. Inventory	824,646.90	- Taxes payable	0.00
II. Accounts receivable and other assets		- Provisions for climate protection projects	1,825,403.00
- Trade accounts receivable	427,795.91	- Other provisions	10,582.63
- Other accounts receivable	162,253.33		
III. Cash and cash equivalents	6,407,160.60		
C. Accruals	2,286.78	C. Accounts payable	1,239,091.15
		- Trade accounts payable	1,233,357.91
		- Other accounts payable	5,733.24
<b>Total</b>	<b>7,832,337.52</b>	<b>Total</b>	<b>7,832,337.52</b>

## Income Statement for atmosfair gGmbH

Revenues	2012	2012	2011
	€	%	€
Voluntary climate protection contributions for climate protection projects (donations)	1,962,374	65.7	1,913,851
Climate protection projects on behalf of customers and funds towards the purchase of technologies, before taxes	1,026,495	34.3	1,958,640
CO <sub>2</sub> reporting software, climate service for companies, before taxes	229,945	7.7	131,847
Other revenues (interest, UBA-support etc.)	41,843	1.4	72,563
<b>Total</b>	<b>3,260,657</b>	<b>109.1</b>	<b>4,076,901</b>
<b>Expenses</b>			
a) Climate protection projects			
- Expenses (setup and operation, audit by TÜV, etc., planning and personnel in developing countries)	1,436,175	48.1	1,184,415
- Climate protection projects on behalf of customers and funds towards the purchase of technologies	1,084,942	36.3	1,241,120
- Reserves for climate protection projects, ongoing obligations until 2020	8,891	0.3	1,004,930
- Project planning and support from atmosfair in Germany (personnel)	116,526	3.9	127,708
Total	2,646,535	88.5	3,558,172
b) Commercial business operations (CBO)*			
- CO <sub>2</sub> reporting software	62,683	2.1	19,190
- Personnel for the climate service for companies	72,829	2.4	79,817
- Taxes on revenues from WGB*	63,040	2.1	25,357
c) Personnel			
- Supervision of contributors and partners	101,960	3.4	111,744
d) Other			
- Administration (telecommunications, postage, office supplies, insurance, membership fees, exchange rate differences, depreciation)	29,841	1.0	31,965
- Office (rent, etc.)	25,770	0.9	20,960
- Credit card fees, payment services, account fees	12,961	0.4	12,726
- IT (fees, maintenance costs, server costs)	103,397	3.5	67,165
- Bookkeeping, tax advisory services, financial statements	30,250	1.0	21,692
- Public relations work	23,500	0.8	46,996
- Printing costs for publications	2,687	0.1	3,380
- Work contracts	71,474	2.4	63,841
- Business trips	13,730	0.5	13,894
- Advertisements (e.g., print ads, billboards, television commercials, promotion teams)	0	0.0	0
Total Others	313,610	10.5	282,619
<b>Total</b>	<b>3,260,657</b>	<b>109.1</b>	<b>4,076,901</b>
<b>Result after accumulation of reserves for climate protection projects</b>	<b>0.00</b>		<b>0.00</b>

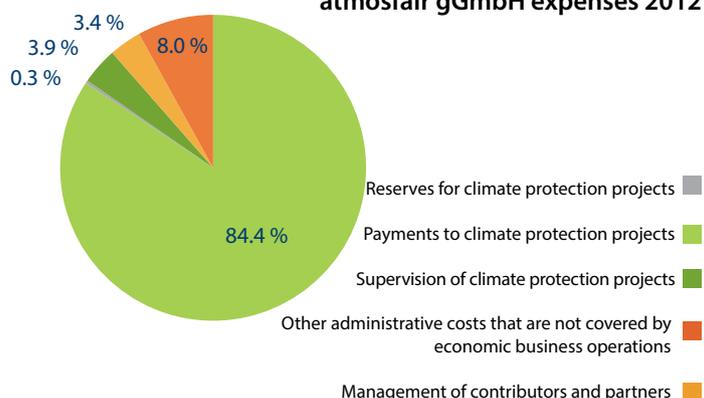
\*CBO = commercial business operations. The realised gains after taxes here (ca. 70,000 euros including interest) beyond the contributions cover the majority of the other expenses named under d) in other expenses

**Cost reduction through atmosfair's own profits**

atmosfair earned nearly 230,000 euros in commercial revenues in 2012. These were realised mainly through the sale of its CO<sub>2</sub> accounting software and consulting services (climate service for companies).

In order to earn these revenues, atmosfair incurred around 135,000 in expenses. Together with interest payments of around 42,000 euros and excluding taxes of around 63,000 euros, a sum of around 70,000 euros remained in total. This completely covered

atmosfair gGmbH expenses 2012



costs such as rent, administration, bookkeeping (see the table on page 34, Expenses, d) Other). With this, atmosfair's own costs were held low and more money could be spent on climate protection projects.

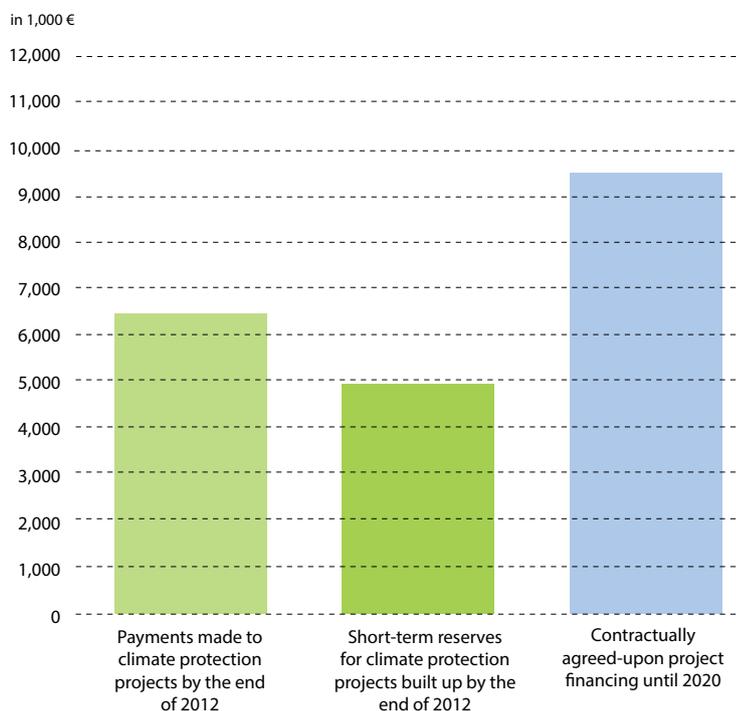
**Own total costs just 9% of contributions**

One of the atmosfair standards requires the efficient use of contributions, and thus only a small percentage of contributions are used for atmosfair's own costs. What is meant here are those funds that are not used for climate protection projects abroad, but rather by atmosfair for its own background work. In 2012, just around 11% of donation money was spent for this purpose and was used for personnel costs for the management of contributions, partners as well as for public relations work and travel costs.

The low costs are also made possible by using atmosfair's own software that makes it possible to manage the majority of the contributions effortlessly. For this, the IT costs rose noticeably from 70,000 to 100,000 euros because it was necessary to make new investments in the maintenance and expansion of the IT system.

What is more, atmosfair continued to forgo all of forms of paid advertisement such as printed ads, billboards, television commercials or promotion teams in 2012. Partners financed the advertising campaign at airports, and the celebrities made their contribution free of charge. In other words, of 100 euros in contributions, 91 euros went to the planners, technology providers as well as to the project operators in the developing countries; atmosfair

Project financing as of the end of 2012



used just around 9 euros for the remaining personnel for administrative costs.

**Achievement of objectives**

The climate protection projects that have thus far been signed off on should save over 1.5 million tonnes of CO<sub>2</sub> in total by the year 2020 according to the project contracts. With this the reduction obligations already received can be covered (see Overview on page 19). Within the two-year period that may elapse between the receipt of the contribution and its use in a climate protection project, atmosfair has thus far always reduced more greenhouse gases than were required by the contributions.

**Review and approval of the managing director's report**

The managing director of the gGmbH drew up the financial statements on December 31, 2012. The partner's meeting determined the proper completion of the annual report on June 18, 2013 and approved the managing director's report. An auditor under oath checked the annual report and issued his unreserved attestation.

## ZEIT ONLINE

"Hardly any calculator asks about data on the seating class, type of aircraft, weather conditions, or stopovers. Only with atmosfair can one specify whether one flew business class in an Airbus 380 on a regular flight without stopovers or in a Boeing 747 in economy class for a charter flight with a stopover."

Zeit Online, 27.09.2012, Touristic selling of indulgences on behalf of the environment

## Frankfurter Rundschau

"In a new study of the ecological service provider atmosfair [...] tourist airlines like TUIfly perform relatively well. In contrast, Lufthansa only achieved 54th place."

Frankfurter Rundschau, 10.09.2012, Weak performance by Lufthansa

## Berliner Morgenpost

"[The] tourism branch keeps the problem [of global warming caused by flying] concealed. Someone who has been active in this topic for years is Dietrich Brockhagen, founder and managing director of atmosfair. He states that air traffic already contributes to 10 percent of climate change, but by 2050 this will triple."

Berliner Morgenpost, 29.05.2012, Compensate? Please no problems on holiday!

## nachtmagazin

With flying, it's not just about minimising CO<sub>2</sub> emissions, but rather environmentally harmful factors such as nitrogen oxides and cloud formation as well [...]. The four-litre campaign of the airline industry [...] excludes these factors. [...] The research institute atmosfair praises this progress, but demands more."

ARD nachtmagazin, 15.01.2013, Airline industry

## die tageszeitung

"With the Airline Index, atmosfair wants to give customers the chance to choose the least environmentally harmful airline. [The data from the Index] covers 95% of all global air traffic."

die tageszeitung (taz), 10.09.2012, Airplanes remain climate killers

## FINANCIAL TIMES

DEUTSCHLAND

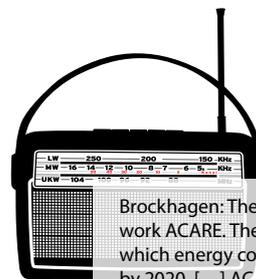
"The differences among the airlines can be significant," said Brockhagen [Managing Director of atmosfair]. The fuel consumption per passenger and kilometre on the same route can be double that of the same flight with another airline."

Financial Times Deutschland (FTD.de), 10.09.2012, Efficiency classes for airlines: climate protection in air traffic is aerial act

## Kölnner Stadt-Anzeiger

"Meanwhile, the Nigerian Development Association for Renewable Energies (DARE) [...] together with Lernen-Helfen-Leben and atmosfair has sold 8,000 wood-saving cookers. [The wood-saving cookers] save up to 80 percent of the firewood formerly used."

Kölnner Stadt-Anzeiger, 02.06.2012, Saving cookers protect the climate



## Deutschlandfunk

Brockhagen: There is this big European aircraft network ACARE. They started a project ten years ago in which energy consumption should be reduced by half by 2020. [...] ACARE itself says that they cannot meet this goal; for this, the potential is too small."

Deutschlandfunk, Environment and consumers, 14.01.2013, atmosfair: Some aircrafts fly with less than four litres

## 2012

### fwv – Magazine for Business and Travel, 1st place

Mystery shopper: test of CO<sub>2</sub> compensation provider websites

*“Short portraits of all the projects can be found on a world map. The explanations of the certifications and standards are crystal clear.(...) I can download the donation receipt (...) and the certificate directly myself. Gladly again!”*



## 2010

### Federation of German Consumer Organisations, 1st place

Test of greenhouse gas compensation providers

*“The test winner is – as in many other international comparisons – atmosfair, a compensation provider for flights. atmosfair achieved very good, and at least good, ratings for almost all the criteria.”*



### University of Graz, 1st place

Voluntary Carbon Offsets – An evaluation of European greenhouse gas compensation certificate providers

*“Highly recommended: atmosfair.”*



## 2008

### Environmental Data Services:

The ENDS Guide to carbon offset

*„atmosfair has one of the best offset portfolios in the entire industry“*



### Université Libre de Bruxelles, 1. Platz

Etude comparative des programmes de compensation volontaire de CO<sub>2</sub> en Belgique

*“This study places atmosfair at the head of compensation providers, an organisation that at present offers the highest quality and remains a model for others.”*



## Team

### Patrons



**Prof. Dr. Klaus Töpfer**

Former executive director of the United Nations Environment Programme (UNEP)



**Prof. Dr. Mojib Latif**

Professor at the Leibniz Institute of Marine Sciences at the University of Kiel



**Prof. Dr. Hartmut Graßl**

Former director of the Max Planck Institute for Meteorology in Hamburg

### Managing Director



**Dr. Dietrich Brockhagen**

*Physicist and economist*  
Former positions at the German Aerospace Centre, the European Commission and the German Federal Ministry for the Environment

### Employees in customer service and product development



**Jan-Moritz Jericke**

*M.A. in International Affairs, Environment and Sustainable Development*  
Business customers, management team



**Petra Kirberger**

Freelance worker in PR/ support, cooperations and companies



**Maik Höhne**

*Industrial engineer*  
CO<sub>2</sub> accounting for cruises and air travel



**Linda Kannenberg**

*M.Sc. in Sustainability Management*  
Events and account management



**Katharina Geppert**

*M.A. in International Development Economics*  
Business development, Travel, and CO<sub>2</sub> reporting



**Bernd Becker**

*Graduate in business administration*  
CO<sub>2</sub> reporting and consulting for business trips

### Employees in CDM project development



**Christian Richter**

*Geographer*  
Team leader of CDM projects, management team



**Dr. Robert Müller**

*Biologist*  
Development and supervision of climate protection projects



**Xaver Kitzinger**

*Economic geographer*  
Supervision of CDM projects (PoA)



**Florian Zerzawy**

*Geographer*  
Development and supervision of climate protection projects, focus on biomass



**Maren Kügler**

*Mechanical engineer*  
Energy technology, project implementation, and controlling



**Katrin Wolf**

*Geographer*  
Monitoring of wood-burning stove projects



**Sven Bratschke**

*M.A. candidate in Global Change Management*  
Work-study student, CDM project management



**Paul Bertheau**

*M.A. candidate in Global Change Management*  
Work-study student, CDM project management

### Scientific advisory board for atmosfair standards



**Christoph Bals**

Executive Director for Policy of the North-South organisation Germanwatch, has followed Germany's climate policy with a critical eye for over 15 years



**Norbert Gorißen**

Leader of the department KI II 7 at the German Federal Ministry for the Environment: financing of international climate protection, the International Climate Initiative



**Franzjosef Schafhausen**

Leader of the subdivision KI I at the German Federal Ministry for the Environment: climate protection, environment, and energy



**Klaus Milke**

CEO of Stiftung Zukunftsfähigkeit and Germanwatch, brings experience and business contacts to climate protection

## References (selection)

### Companies



### NGOs, political organisations,



### Climate-friendly events



## Partners (selection)

### Business travel



### Tourism



### Venues



### Climate protection projects





Prof. Dr. Klaus Töpfer

"Climate protection with atmosfair."



Prof. Dr. Hartmut Graßl

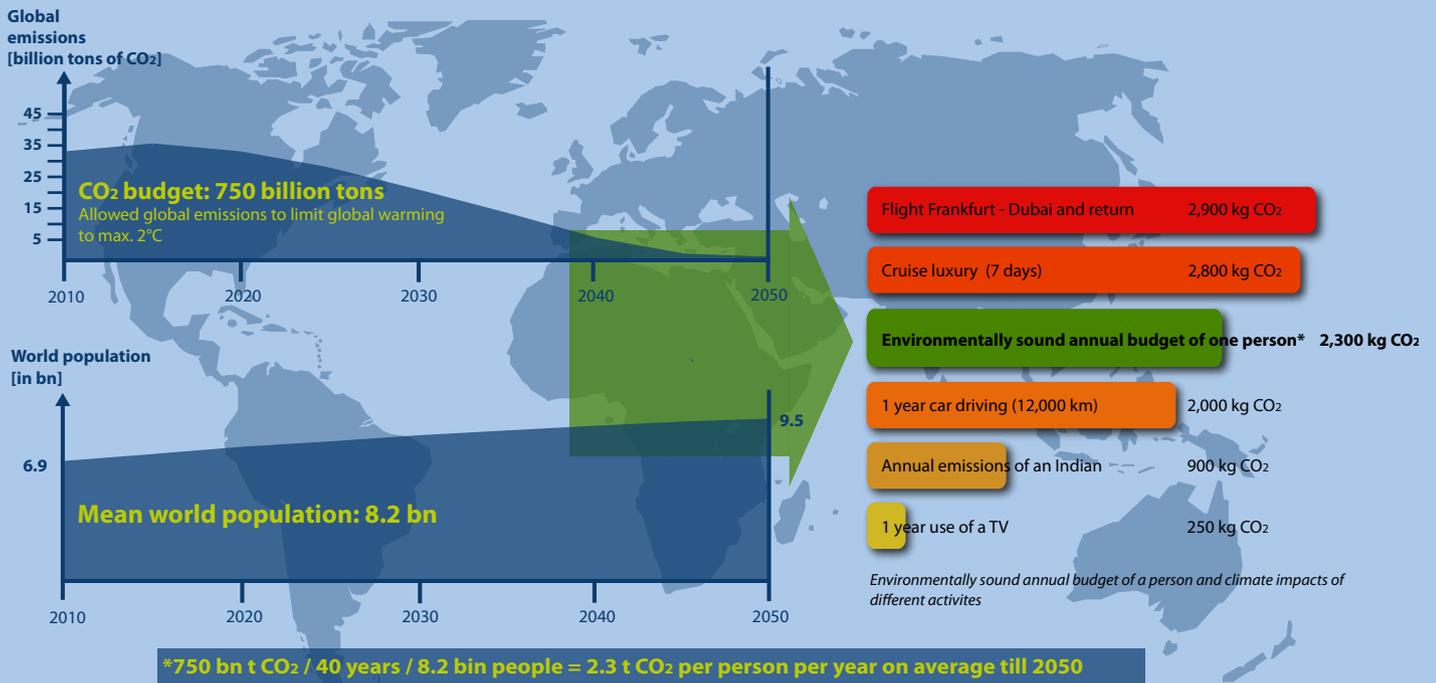
"For now flying can be only targeted with emission offsetting, but then at least with atmosfair."



Prof. Dr. Mojib Latif

"Flying without atmosfair is like climate without protection."

## Annual Climate Budget and Activities of one Person



In order to bring the consequences of climate change under control, the global community of states met in Cancún and agreed to limit the mean global warming to 2°C compared to the level of the pre-industrial age. A global emissions budget of ca. 750 billion tonnes of CO<sub>2</sub> is left to achieve this target. Assuming a mean world population of 8.2 billion people between 2010 and 2050, this means that every person is allowed to produce emissions which are still acceptable to the climate of on average 2.3 tonnes of CO<sub>2</sub> per year.

As can be seen from the graphic, the climate impact of individual flights or other human activities already reaches the level of the annual environmentally sound emissions budget. Accordingly, an individual's own budget is soon used up. However, if there is an upcoming trip and the best climate-friendly alternative (e.g. videoconferences or train journeys to close destinations) is not available or suitable, offsetting flight emissions with atmosfair is a first meaningful step to help the climate.