

In the past years, the market for voluntary compensation for greenhouse gases has developed very dynamically. Above all, voluntary market (VER) projects are being used to compensate CO<sub>2</sub> emissions.

Most of the certificates traded on the German market were generated by renewable energy projects. In case of buyers, which are especially companies, they are compensated for their company footprints (CCF), product footprints (PCF) and travel. The quality of the projects is the most important factor when buying a certificate.

Buyers see in a voluntary compensatory market an insufficient supply of certificates from less developed countries, from Germany and from high-quality forest projects.

We as natureOffice too, see the greatest added value for climate and human beings in these projects and therefore focus our own projects on the themes:

Forest projects of high-quality standards from developing countries (Africa) in combination with a regional commitment in Germany

Our climate protection projects are not suitable to buy our way out of something. Our climate protection projects directly affect our fight against climate change in order to improve the life situation of many people and to protect our environment.

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Andreas Weckwert

Managing Director of natureOffice Gmb

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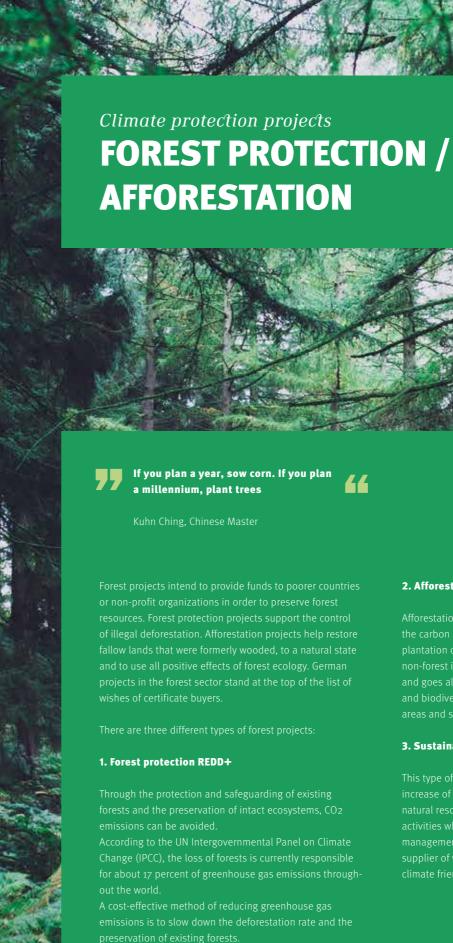
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# 11 good reasons for a voluntary compensation

Should the achievement of the climate neutrality be your goal, whether you want to place a product, a whole product range or your company in a climate-friendly manner, the voluntary compensation for unavoidable CO2 emissions is a very good measure accompanied by the following added values:

- A voluntary compensation reduces CO2 emissions in the balance sheet.
- Climate compensation generates an added value for you company communication.
- Voluntary compensation for CO2 emissions by means of high-quality climate protection projects is your opener for responsibility discussions on environment-related communication.
- Voluntary compensation is an educational opportunity, since your company directly faces its own energy consumption and the contents or results of the CO<sub>2</sub>-balance. Since the issue of voluntary compensation is not yet anchored in the minds of the general public, it is necessary for you to contribute to the mechanism.
- In comparison to many small direct protection measures in the company daily life, tons instead of kilograms can be avoided and are therefore of great ecological
- The hurdles to achieving the company's climate neutrality are low. The implementation does not initially require any fundamental change in internal workflows or production processes. Voluntary CO2 emissions can be implemented in the short term.

- You will be perceived by customers, partners and market players as a company that acts responsibly, since you assume responsibility for your own CO2 emissions.
- Great external impact climate neutral companies and products alongside with professional marketing communicate your important environmental policy goal.
- Coupling your voluntary compensation with a specific product or service you offer is a subliminal communication tool and can be an important driver for your market success because your product may need to be displayed on the shelf next to many other market competitors and it should be sold without help.
- Thanks to your climate protection commitment, you can directly address new target groups and bind them to your company in the long term through transparent commu-
- Through the permanent compensation within the same projects, progress and improvements are made visible through your commitment. This point is also important for transparent marketing, but it also increases the communicative capacity of your commitment.



projects in the forest sector stand at the top of the list of

According to the UN Intergovernmental Panel on Climate Change (IPCC), the loss of forests is currently responsible

A cost-effective method of reducing greenhouse gas emissions is to slow down the deforestation rate and the

### 2. Afforestation / Reforestation

and goes along with many added values for ecosystems

### 3. Sustainable forest management

increase of storage capacity of the forest while using the supplier of wood, however in a particularly sustainable and climate friendly way.

## **PROJECT TOGO**

Agou and Kpalimé, Togo

PROJECT TOGO works directly together with local people – from the establishment of tree nurseries, the cultivation of indigenous tree species, the installation of firebreaks and protecting hedges, the maintenance, the monitoring and management of forests and agricultural lands to complementary infrastructure measures. The emphasis is on education, water, energy, employment and health. With the involvement of civil society and its exemplary transparency, the commitment of PROJECT TOGO extends far beyond the goals of pure climate protection projects: PROJECT TOGO is a climate protection project that strengthens the site and provides long-term vistas for people.

The project also includes the areas of natural and commercial timberland, organic farming, education and training.

In the center of the project area, there is a natural forest with a high biodiversity and regeneration capacity that remains as a refuge for ecological resilience and free from economic use. This natural forest is lined with a commercial timberland in combination with areas for gardening and farming. PROJECT TOGO thus creates effective protection areas for flora and fauna and strengthens soil fertility, regional water cycles and vegetation systems.

Instead of acquiring the project area (landgrabbing), PROJECT TOGO has successfully applied for the commercial exploitation right of the areas that are degraded and have become fallow lands. The suitability of the areas as a reforestation area for CO2

compensation meets all conditions required by the Gold Standard Foundation. Once the integral revaluation of the sites is completed, PROJECT TOGO will return the exploitation right back to the national community (local ownership) and therefore enable regional future viability in the long term.

The implementation of this project is in line with our vision and policy for a sustainable forest management. The additional value of the forestry will motivate the population of the project region to preserve the existing forests and thus the vegetation of Togo.

André Kouassi Ablom Johnson, Minister of environmental and forest resources of Togo





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## **Deutschland Plus**

## 45 sites of operation throughout Germany

Our world begins before our home. Our world is Africa, Asia, South America, the two poles — our world is, however and above all, Germany. This is how many of our customers feel, and they also want to be given the opportunity to be active in the fight against climate change at the regional level in Germany.

As of 2012, we have developed the combined certificate together with "Deutschland plus". And exactly this combined certificate complies with the wish of many of our customers. We combine certified climate protection projects with a regional commitment in the alpine upland, the Schwarzland, the Hunsrück, the Rhön and the Sauerland.

This combination of certified CO2 binding or reduction, coupled with the possibility to engage directly in the immediate catchment area and to work together with the non-profit Bergwaldprojekt e.V. in forest ecology, is a proven method of fighting against the perceptible climate change that is already present in our forests. It is about pests that did not exist in our place 15 years ago. We are talking about the fact that in many regions of Germany the pine is already too warm in the annual average and we are talking about protecting one of our most important cultural heritage and protecting it over the next generations.

With Deutschland plus, you will pay an additional fee worth five Euros for each purchased certificate and this money will be passed directly on the Bergwaldprojekt e.V. without any deductions. With this amount of money, you directly support the forest ecology project in German state forests and help support the work on site in many catchment areas. Over 10,000 voluntary helpers are already involved every year in the catchment areas that are to be found from the island Rügen to the deepest Bavarian Alps. Your additional contribution is 100% used for non-profit ecology projects – you can count on that.



## natureOffice and Bergwaldprojekt e.V.: A cooperation for the preservation of natural resources

Through the initiative Deutschland Plus, natureOffice has been supporting the work of Bergwaldprojekt e.V. in Germany since 2012. Deutschland Plus is especially characterized by its originality, the high transparency, the efficiency in the implementation and the personal commitment of the managing director of natureOffice, Andreas Weckwert. These factors create trust among the partners and customers and make the initiative very successful:

- Originality: Deutschland Plus was developed by nature-Office and Bergwaldprojekt e.V. as first certificate which combines the certified CO2 compensation and a natural bonus for German forests and moors; Deutschland Plus is a climate protection certificate combination of international and regional climate protection. natureOffice covers the international commitment with the afforestation project PROJECT TOGO that is entirely managed and funded by natureOffice. In addition to climate protection, it also includes social programs for the sustainable support of the local population. Through the project, natureOffice gets its climate protection certificates and uses the market mechanism of compensation for greenhouse gases to create a sustainable, self-zsustaining added value in the project region. The regional commitment is covered by an additional amount of money that is 10% passed on the Bergwaldprojekt e.V. and therefore facilitates additional environmental and climate protection projects.
- Transparency: natureOffice reports monthly to Bergwaldprojekt on the sale of all Deutschland Plus certificates, staggered by region. This ensures that the funds are used where the customer so wishes.

The Bergwaldprojekt e.V. works within the framework of Deutschland Plus in the alpine upland, in the Röhn, in Werdohl/Sauerland, in Hunsrück and in the Schwarzland, among other things in the forest and landscape maintenance, the care for the wild boar, the planting and re-cultivation of the marsh. Deutschland Plus was designed in order to offer companies the opportunity to engage in environmental and climate protection at a regional level, since in Germany too adjustments to the consequences of climate change are urgently needed.

- Efficiency: Thanks to the initiative Deutschland Plus of natureOffice and Bergwaldprojekt e.V., an efficient tool was developed to effectively improve the state of forests, biotopes and moors in the project areas. The lean infrastructure allows an effective use of resources and conveys the climate and species protection issues with their aggravating consequences for our society of a growing population group. This strengthens the regional and nationwide commitment to our natural resources on a broad basis.
- The Personal commitment of the managing director

  Andreas Weckwert in the cooperation of natureOffice
  and Bergwaldprojekt e.V. is used for regular project visit
  with customers, the preparation of documentation and
  joint workshops. This authenticity convinces a growing
  customer circle beyond competitors

We thank natureOffice and its customers for their valuable support of our work aiming at protecting an preserving domestic ecosystems.

Stephen Wehner
The executive board of Bergwaldprojekt e.V.

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# **Deutschland Plus Alpen**

Bad Tölz, Lechtal, Oberammergau, Garmisch-Partenkirchen, Schliersee, Bayern

In addition to the greening of the mixed mountain forest with rotted plants, the main focus in the project area is on storm and bark beetle bar lands, on the particularly important rehabilitation of the protection forest. In a time characterized by weather extremes, the forests on the mountain sides today have important functions for the ecosystem on site, such as soil erosion protection, avalanche and water protection.

If the protective mixed mountain forest is missing, this also has a considerable impact on the stability of the whole ecosystem, in addition to the local threat to settlements, traffic routes and meadows.

Further work carried out in this region:

- Young thinning
- Plantation of indigenous tree species
- Fight against bark beetle
- Installation and maintenance of walkways
- High seat construction
- Biotope maintenance

Type of project:	Forest protection
Project N°:	101
Cooperation partners:	Bergwaldprojekt e.V.
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd

Type of certificate:









## **Deutschland Plus Schwarzwald**

Triberg, Feldberg, Freiburg, Forbach, Baden-Baden

The Bergwaldprojekt has been active for many years in Triberg, Forbach, Fribourg and Feldberg locations. The areas of activity here in the regions are as diverse as the regions themselves. Whether the maintenance of the river valley in Triberg, forests care for the promotion of hardwood and silver fir in Forbach, improvement of living conditions of the grouse species caper-caillie and hazel grouse in the region around Fribourg up to the landscape care in the area of the Feldberg. The work in the region is supported by Deutschland Plus Schwarzwald.

Further work carried out in this region:

- Young tree care
- Planting of indigenous tree species on bare lands was caused by the winter storms Vivian and Wiebke 1990
- Forest maintenance for the promotion of hardwood and silver fir.
- Individual protection against browsing
- Construction of access ways
- High seat construction
- Maintenance of habitat for capercaillie, hazel grouse and black grouse
- Rehydratation of upland moor
- Landscape maintenance

Type of project:	Forest protection
Project N°:	102
Cooperation partners:	Bergwaldprojekt e.V.
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd
Type of certificate:	
Gold Standard®	



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## **Deutschland Plus Rhön**

Hessen, Thüringen, Bayern

The Rhön, the land of open distances, is a low mountain range at the junction between Bavaria, Hesse and Thuringia.

Due to the use over the centuries, a varied landscape developed with beech groves, bushes, arable land and speciose meadows in the highlands.

In 1991, UNESCO recognized the Rhön as a biosphere reserve in order to ensure the protection, maintenance and development of this exceptional low mountain landscape. For a couple of years, the proliferation of lupin has been closely monitored in the Bavarian Rhön and appropriate measures have been taken to limit their further spread, since they suppress protected species of animals and

plants. However, the conservation of biodiversity is one of the most important goals in our time.

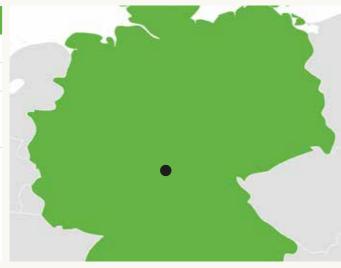
Further work conducted in this region:

- Fight against lupin
- Maintenance of habitat for the black grouse
- Hydratation of upland moor
- Forest transformation
- Landscape maintenance

Type of project:	Forest protection
Project N°:	103
Cooperation partners:	Bergwaldprojekt e.V.
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd

Type of certificate:

## Gold Standard®







## **Deutschland Plus Hunsrück**

## Nationalpark Hunsrück-Hochwald

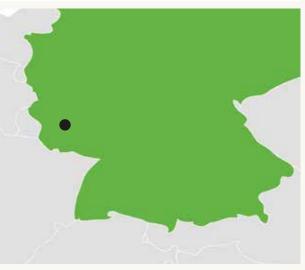
Since 2012, the Bergwaldprojekt e.V. and the Foundation Natur und Umwelt Rhineland-Palatinate have been working together on the rehydratation of low mountain side moor in Morbach (Hunsrück). These hillside breaks come into existence in the precipitous climate zones of the high altitude areas on acquicludes of the Hunsrück quartz ridge and contain speciose transition peat bog, moor forests and spring streams.

With the rehydratation of the sensitive disturbed hillside breaks, these moors are restored to their original state in the long term and can thus fulfill their tasks as water and carbon storage as well as the habitat of many rare animal and plant species.

Main tasks to be undertaken in this region:

- Construction of drainage ditches
- Transformation of pure spruce stands into mixed forests close to nature.
- Dismantling of driveways
- Improvement of water supply in ditches and jackdaws

Type of project:	Forest protection
Project N°:	104
Cooperation partners:	Bergwaldprojekt e.V.
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd
Type of certificate:	
Gold St	andard



## **Deutschland Plus Werdohl**

Werdohl, Sauerland

The Sauerland is one of the regions most affected by the storm "Kyrill" in Germany. Also in the municipal forest of Werdohl, "Kyrill" cracked on January 18, 2007 big holes. In 2008 cooperation began to address storm damage in the forest. On cleared storm throws lands, nearly all local deciduous trees are planted from the service tree to the copper beech, in order to create a new natural and stable forest generation. On the dry side, heatloving species, such as service trees and cherries, in the lower valleys, for example, the sycamore which is dependent on fresher sites is planted.

Young trees are not planted comprehensively, but in groups. The natural regeneration (for example birch, mountain ash, meadow) is integrated intothe planting area.

Further tasks to be undertaken in this region:

- Group-wise planting on stormy areas
- Forest maintenance
- Care for young trees stock
- Tagerted promotion of sustainable trees through hand felling of persecutors

Type of project:	Forest protection
Project N°:	105
Cooperation partners:	Bergwaldprojekt e.V.
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd

Type of certificate:

## Gold Standard®







# Österreich Plus Montafon

Montafon, Vorarlberg

The project Österreich Plus is devoted to forest preservation and transformation. In cooperation with the non-profit foundation Bergwaldprojekt, we offer our customers the opportunity to get involved not only internally but also regionally.

Since 1994, the Bergwaldprojekt has been operating in the Montafon forests. In the first years, the Bergwaldprojekt worked in the forests above Vandans in the Rellstal and in the St. Gallenkirch, from 1997 to 2010 in Silbertal and from 2011 in Rellstal.

From 2014 onwards, the Bergwaldprojekt is again active in Silbertal. The main work of the Bergwaldprojekt in the Montafon is the following:

- Maintenance and new construction of ways
- Compulsory use
- Clearing of the felling area
- Planting
- Individual protection
- Keeping grazing lands free

With Österreich plus, you are supporting a precise regional project, currently in the Montafon in Voralberg, because through the purchase of every Österreich Plus climate protection combined certificate 5 Euros go directly to the foundation Bergwaldprojekt.

Type of project:	Forest protection
Project N°:	106
Cooperation partners:	Bergwaldprojekt, Schweiz
Certifier:	In cooperation with PROJECT TOGO: TÜV Süd
Type of certificate:	
Gold St	tandard®



## **Ecomapua Amazon REDD Project**

Marajó Island, Pará State, Brazil

The Ecomapuá Amazon REDD project is located on the Marajó island, Pará State, in the Brazilian Amazona region. The Marajó várzea is a valuable and threatened ecosystem at the same time.

The primary aim of the project is to avoid the deforestation of an area of 86,269 hectares on a property acquired by Ecomapuá Conservação Ltda. This project will generate reductions of 1,432,278 CO2e over a 30-year project period (from 01/01/2003 to 12/31/2032) on a subarea of 4,253 hectares.

In addition to forest protection, a part of the revenue from the emission certificates is used to improve the social and ecological conditions of the local population.

The Marajó island is an extremely high priority within the Brazilian Ministry of Environment, the Ecomapuá Amazon REDD project contributes to the national nature conservation targets and encourages at the same time further protection efforts in this valuable ecosystem.

Project N°:	107
Certifier:	TÜV Rheinland
Type of certificate:	
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VCS	CARB⊕N STANDARD







# Natural High Forest Rehabilitation Project on degraded land of Kibale National Park

Kibale National Park, Kabarole, Uganda

The Kibale National Park (KNP) is located in the western part of Uganda. The project is implemented by the Uganda Wildlife Authority in cooperation with Face the Future.

Due to the regularly high precipitation, the complex landform, the undulating valleys as well as the impact of human activity (through burning lands, using larger areas as grazing lands for animals, producing charcoal) and poor land management, the area was subjected to a severe deterioration of vegetation and soil erosion.

The project actively contributes to climate protection, since the planted, fast growing, indigenous tress bind climate-harmful greenhouse gases from the atmosphere in their biomass and thus permanently remove them from the atmosphere.

The project aims at achieving many other socio-economic and ecological advantages in the project region. Climate protection, biodiversity preservation, local community development and soil erosion control, through the restoration of forest vegetation on degraded land areas.

Project N°:	116
Certifier:	SCS Global Services
Type of certificate:	
VCS	VERIFIED CARB⊕N STANDARD
JN Agenda 2030 Goals (	(see page 55):
1 2 6 13 15	



# **Brazil Nut Rainforest Community Project**

Madre de Dios, Peru

The second largest share of the Amazon rainforest is located in Peru. The region where the project is located is considered as the region with the highest biodiversity density. Forest damage mainly originates from the massive illegal logging and the use of the bare areas as farmland and grazing land.

The Brazil Nut Rainforest Community climate protection project targets at protecting the valuable primary rainforest which is home of a large number of rare, endangered plants and animals and provides them witha habitat.

Thanks to its activities, the project sustainably grants about 400 families income opportunities through the traditional harvest of Brazil nuts. The local population is strongly involved in the project and is, for example, trained in sustainable harvesting techniques. Modern processing of the nuts increases their quality and gives

small farmers the opportunity to generate higher incomes through the development of new markets. Access to microcredits is also granted within the scope of this project.

The project area covers about 300,000 hectares of original Amazon rainforest. In order to prevent forest devastation, a large number of monitoring mechanisms have been used to continue keeping the forest as a carbon sink.

Type of project:	Forest protection
Project N°:	117
Certifier:	SCS Global Services

Type of certificate:



UN Agenda 2030 Goals (see page 55):









## Climate protection projects **HYDRO-ELECTRIC POWER**

Water is the coal of the future. Tomorrow's energy is water that has been decomposed by electricity. The elements of water, hydrogen and oxygen, decomposed in this manner, will secure the earth's energy supply far into the future.

Jules Verne

### **Renewable Energies**

Water energy, wind energy, solar energy and biomass erative energy sources and are therefore very significant. A change is essential to decrease CO2 emissions in the long term. Renewable energy projects are mainly carried out

#### **Water Power**

felt this power in the year 100 BC and installed water-

of electricity. Water power generation is a particular environmental friendly method of energy generation. No raw A distinction is made between run-of-river power stations, storage power stations and pump storage stations.

erate electrical energy, but also to supply the population



# **Bujagali Hydropower Project**

Jinja, Uganda

The Bujagali Power Station is a water power plant over the Victoria Nile to produce energy at the Bujagali waterfall in Uganda. The construction began in 2007 and ended in 2012. The water power plant was officially inaugurated on October 8, 2012. The capacity of the station is 250 megawatts (340,000 hp). The plant is one of the most powerful hydroelectric stations in Uganda.

In case of all hydroelectric stations, water is kept at a high potential level in the storage space by means of a dam (also called retaining wall or barrage). The motion energy of the outflowing water is transmitted to a water turbine or a waterwheel, which in turn drives an electric generator directly or through a transmission, that converts the mechanical energy into electrical power. A transformer station

is also connected to many hydropower plants for feeding into a medium or high-voltage grid.

Water power is therefore one of the renewable forms of energy, since no carbon is emitted by direct operation (compared to thermal power plants which use fossil fuel)

Type of project:	Hydro-electric power
Project N°:	108
Certifier:	TÜV Rheinland
Type of certificate:	VERIFIED CARB⊕N STANDARD
UN Agenda 2030 Goals (see page	e 55):







# Sarbari II hydropower project by DSL Hydrowatt Ltd.

Kullu, Himachal Pradesh, India

As far as the climate protection project "Sarbari II Hydro Power Project" is concerned, it is a run-of-river power station located in Kullu, a district of the Indian state of Himachal Pradesh (Northern India).

It is connected in series with the existing run-of-river plant Sarbari I. This means that no further intervention in the environment for dust holes etc. was needed. With a total capacity of 5.4 MW, this is a smaller scale project. The power generated is injected into the local power grid. This contributes signi-ficantly to the improvement of power and water supply of the population.

This project goes along with a series of other social, ecological and socio-economic advantages, but the most significant is the substitution of fossil fuels by renewable energy sources.

Type of project:	Hydro-electric power
Project N°:	109
Certifier:	Bureau Veritas Certification SAS
Type of certificate:	VERIFIED CARB⊕N STANDARD
UN Agenda 2030 Goals (see p	age 55):



# **Saysetha Small Hydropower Project**

Saysetha, Laos

Laos has considerable potential to produce hydropower, but the country is currently lacking of necessary economic resources to provide electricity services to rural communities. This hydropower project helps solve this problem by generating sustainable power for the rural communities and reducing at the same time the need for firewood.

Firewood represents the large part of primary energy consumption in Laos and contributes to drastically shrinking tropical forests in the country. Since the demand for power supply to rural regions continues to increase, Laos needs to switch to sustainable energy options so as to save its forests and at the same time reduce or limit greenhouse gas emissions.

The climate protection project emphasizes on the large potential

of Laos water power and supplies the region, especially the rural communities, with electricity from this sustainable energy source.

Thanks to the reduced demand for firewood, forests and vegetation can once again recover, while the hydropower project saves 50,000 tons of greenhouse gases annually.

The project contributes to sustainable development in the project area, by creating jobs, improving local infrastructure and implementing a water supply program for villagers.

Type of project:	Hydro-electric power
Project N°:	120
Certifier:	Shenzhen CTI International Certification Co Ltd.

Type of certificate:

## Gold Standard®

UN Agenda 2030 Goals (see page 55):







# Climate protection projects WIND POWER



Wind energy is climate friendly and creates indigenous added value. Moreover, it is a matured and thus relatively cheap technology that contributes to meeting the electricity demand, especially in the winter half year. Disadvantages are the change in the land-scape and the fluctuating supply. It needs a mix of wind energy and complementary energy sources such as solar or hydro power.

Prof. Dr. Rolf Wüstenhagen University of St. Gallen

Whenever there is a lot of wind, i.e. on high altitudes and high plateaus, wind power stations help generate clean energy. Wind power plants can be operated as small community plants or large wind parks. The energy which is produced by wind is a very clean alternative to electricity generation from fossil fuels. Wind power plants protect the climate in the long term. Already, a plant with an output of about 1.5 MW avoids about 64,000 tons of CO2e emissions over a period of 20 years. In order to produce 1.5 MW in conventional plants, about 80,000 tons of brown coal must be incinerated.

In the case of a climate protection project for the construction of a wind park, the amount of electricity normally generated ("baseline emission situation without a project") is determined to assess the reduction quantities. To this end, an emission factor is calculated basing on the composition of the existing power stations and newly constructed power plants. This indicates the amount of greenhouse gas per

kilowatt-hour of electricity. Since power generation from coal and other fossil fuels dominates in most countries, this will result in a relatively high emission factor.

If electricity is generated in the wind power plant ("emission situation with the project"), the emission factor of the electricity mix decreases, since no greenhouse gas emissions are generated when using regenerative energies such as wind energy, hydropower or sunlight. Depending on the amount of electricity which the wind power plant can produce, emissions are significantly reduced compared to the emission situation without the project. The emissions saved by the project can then be sold as reduction certificates for compensatory purposes

## **Prony Wind Power**

Prony, New Caledonia

The windy New Caledonia constantly reduces its dependence on fossil fuels. The Prony wind park thus influences positively the national grid towards a more sustainable generation of clean energy and walks along with socio-economic improvements for municipalities.

The Pacific Islands are facing a growing environmental and socioeconomic burden, which is further exacerbated by the global climate change. The small developing island states are particularly most affected. This fact has been recognized by the UNO as well.

Even though they are heavily affected by climate changes and the extreme weather events, these islands remain extremely vulnerable to the future changes in the regional climate and the rising sea level

In addition to replacing dirty fossil energies by energies from sustainable wind power, the project addresses many environmental and social issues. Strengthening civil society and the rights of the aborigines, Kanak, is achieved through the targeted support of lo-

cal and regional initiatives on employment and promotion of youth, of the community in general.

In order to avoid possible negative effects on nature and land-scape, the infrastructure of wind parks is based on existing roads so as to limit erosion. New Caledonia is located in a hurricane hot spot. The wind turbines used in the project are specially designed for this kind of climate, so that the whole wind farm can be tilted down within a few hours in case of extreme weather warnings. This smart engineering approach makes the project perfect for the location and ensures that the nation can sustain green power during an extreme climate event such as a hurricane.

Type of project:	Wind power
Project N°:	118
Certifier:	Germanischer Lloyd Certification

Type of certificate:

# Gold Standard

UN Agenda 2030 Goals (see page 55):









## **Bac Lieu Wind Farm**

Bac Lieu, Vietnam

The wind park is located in the province of Bac Lieu in the South Vietnamese Mekong Delta and provides clean wind power to the national power grid. This is the first largest coastal wind power project in Vietnam which generates around 320,000 MWh of renewable wind energy annually, thus preventing 188,532 tons of CO2e from entering the atmosphere.

Over the past twenty years, the demand for electricity in Vietnam has grown particularly fast, with the demand that is required to support the growth exceeding the supply. Regular power shortages and failures have a negative impact on the economy and life of the local population.

With an installed output of 99.2 MW, the Bac Lieu wind park produces about 320,000 MWh of clean power and saves 188,532 tons of CO2e emissions annually. It contributes to balancing the supply and demand gap and proves to be an important investment in the renewable energy supply strategy in Vietnam

The wind farm provides more than 100 jobs and supports the local community through the promotion of social activities (sports, cultural events) and contributes to the Charity Fund (Fund for the Poor, Fund for Farmers).

Furthermore, the project sponsor planted 24,800 trees to promote the bio-diversity in the region.

Type of project:	Wind power
Project N°:	119
Certifier:	TÜV Nord
Type of certificate:	VERIFIED CARB⊕N STANDARD
UN Agenda 2030 Goals (see page 55):  1 8 13 15	



# **Changbin and Taichung Wind Power**

Changbing und Taichung, Taiwan

As far as this climate protection project is concerned, it is about two wind farms that use wind energy which is still unexploited, on the west coast of the island. Both projects of Changbin and Taichung promote a less carbon-intensive future for people in Taiwan. Besides the positive impact on the global climate, the project creates jobs and benefits from the environment. In the scope of this project, surrounding beaches will be regularly cleaned, homegrown trees will be planted and 50 fellowships granted to students from the region.

Technically speaking, the two wind parks consist of 65 wind turbines with a respective output of 2.3 MW. At full capacity, the total output of the project is expected to be 507 GWh per year, which will be delivered to the Regional Electricity Authority, Taipower. These new parks are very popular among the Taiwanese public and have developed into tourist destinations. Guided tours are offered by the parks with the aim to sensitize the public on the issue. All this contributes to Taiwan's efforts to achieve sustainable development.

Type of project:	Wind power
Project N°:	112
Certifier:	CTI Verifications
Type of certificate:	
Gold St	andard
UN Agenda 2030 Goals (see pa	age 55):
7 8 11 13	







# **Wind Energy Project by Hindustan Spinners**

Tamil Nadu, India

The project activity involves the implementation of an 8.5 MW wind power project consisting of 13 wind turbine generators (WTGs) in villages in Kanyakumari, Tirunelveli and Coimbatore districts in Tamil Nadu.

All the energy produced is injected into the power grid. The energy generated from wind turbines is almost CO2-neutral and therefore does not generate additional greenhouse gas emissions. At the same time, the same amount of energy that was previously produced with fossil fuel can be taken off the grid. This is a considerable contribution to the expansion of renewable energies in India and this will help the country meet the Paris greenhouse gas reduction commitments.

Type of project:	Wind power
Project N°:	122
Certifier:	TÜV Nord Cert GmbH
Type of certificate:	VERIFIED CARB⊕N STANDARD



## Climate protection projects **SOLAR POWER**



I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that

The sun is one of the most sustainable energy sources. Socan produce a large part of power required in a clean and this technology, the costs of the generated electricity as well as the amortization time of the plants are steadily decreasing. The share in the global climate-friendly electricity generation with solar cells is increasing.

for domestic use and heating water.

The concrete advantages of solar power use compared to conventional electricity generation are:

- Using solar power does not release air pollutants, for

and international conflicts, such as in the Middle East.

• From a human standpoint, solar power is indefinitely

form of renewable energy generation that makes sense. However, there is often a lack of start-up funding. Solar projects certified with Gold Standard would not be able to be implemented without the sale of CO2 certificates. In ecologically and socially sustainable development in the



## **Aura Solar I Solar Project**

Baja California Sur, Mexico

The solar plant is located on a 100-hectare site in La Paz, state of Baja California Sur.

Aura Solar I is expected to produce 65.7 GWh of electricity per year to be sold exclusively to the Mexico Federal Power Company CFE, namely through a 20-year PPA, which is expandable and based on the small electricity producers of the country (Pequeña Producción de Energía Eléctrica). This power is transferred to the substation "Olas Altas" via a new 115 kv / 2.9 km long transmission line.

The great potential of solar power is still hardly used. This is due to various reasons. So far, a specific funding program is missing. The technical and commercial risks of projects are therefore often regarded as too high and prevent project developers from investing in solar power technologies. The national financial institutions have little experience in the evaluation and funding of large-scale solar projects. The cooperation between the private sector, science and public institutions is too little developed to stimulate investment in innovative technologies. Moreover, the various actors do not have mechanisms for a coordinated and stimulating approach for the market of solar technologies.

Mexico faces two main challenges in power supply: as a result of the growth of industry and population, the production capacities must be constantly expanded. Between 2014 and 2027, the installed capacity is expected to nearly double from 62.2 to 114.9 Gigawatts. Furthermore, the government has set ambitious targets relating to the shift towards renewable energies. By 2024, 35% of the electricity should come from fuelless energy sources and by 2050 already 50%.





## **Siam Solar Energy**

## Kanchanaburi und Suphanburi, Thailand

In Thailand, renewable energies have great potential, especially solar power. The country has set itself the goal to expand photovoltaics to 60,000 MW output, but only until 2036.

The innovative solar photovoltaic technology has recently been installed in two rural provinces of Thailand with a production output of over 147,000 MWh of clean electricity per year.

Because Thailand is so far heavily dependent on imported fossil fuels such as natural gas, the innovative photovoltaic power plants offer a welcome support in addressing the challenges regarding energy uncertainty and trade deficit.

The project consists of the installation of 10 solar PV power plants connected to the power supply system. The project uses innovative solar PV technology. The PV modules use a very thin layer of semi-conductors, a few micrometers thick instead of a traditional silicon conductor. The project generates electricity for the Thai power grid.

Type of project:

Project N°:

125

Certifier:

Epic Sustainability
Services Pvt Ltd

Type of certificate:



UN Agenda 2030 Goals (see page 55):







Climate protection projects

ENERGY EFFICIENCY

In contrast to renewable energy projects, that make electricity available more climate friendly, energy efficiency projects are used for consumption purposes. This is most of the time about the exchange of existing technology with energy-saving technologies, which achieve the same or better performance with a lower energy consumption. This applies to many areas, for example, from household

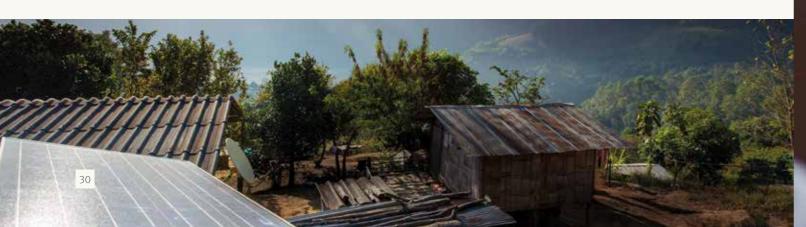
#### 1. Clean cookers

Too much trees are still being cut to be used as firewood for cooking. Energy-efficient ovens can save up to 80% wood, compared to traditional ovens. This not only saves time because less wood has to be collected or saves money that is supposed to be used to purchase fuel, but it also helps to preserve forest ecology. People's health is improved because of the lower air pollution owing to the use of "clean" cookers. According to WHO, about 16,000 people in Ghana e.g. die prematurely every year as a consequence of respiratory and cardiac/circulatory diseases due to the use of inefficient cookers.

### 2. Further power efficiency projects

In agriculture for example, there are huge amounts of waste worldwide, such as coconut shells, green waste, grass and other biowaste. This waste is now being used to generate biogas through the process using gasification or oxidizing agents. The biogas, in turn, is used to generate electricity or for instance to cook.

The further use of waste and residues is therefore important, since otherwise a lot of unused biowaste is simply left to rot and decay and then emissions are triggered again by fermentation and decomposition processes



# **Paradigm Healthy Cookstove and Water Treatment**

All regions, Kenia

The climate protection project aims at improving health and income throughout Kenya by reducing the time and costs in order to get fuel for cooking in individual households as well as for institutions for domestic and institutional cuisine.

The local population will also have better access to clean water. In order to supply households and institutions in a comprehensive way in Kenya with the most suitable technology for clean cooking and the treatment of drining water, the project is only possible and funded thanks to the sale of CO2 certificates.

Local market channels are being developed and NGOs are helping to create sustainable distribution networks of locally suitable efficient ovens and water treatment products.

Energy efficiency
111
ERM Certification and Verification Services

Type of certificate:

## Gold Standard®

UN Agenda 2030 Goals (see page 55):









## **Toyola Clean Cookstoves**

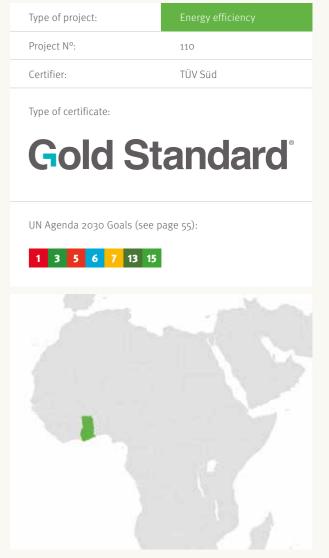
All regions, Ghana

In this energy efficiency project in Ghana, conventional cooking devices are replaced by much more efficient ovens, the Toyola Coalpots. Households cooking with the new ovens reduce their fuel consumption by about 30% per year. This corresponds to a value of 80 Euros. The average annual income per capita in Ghana is 250 Euros. Households in particular need can purchase the stoves on credit. Instalments can be made by the savings made for the purchase of fuel.

Toyola Energy employs 170 people for the production of stoves and many other people for sales.

Apart from fuel savings, another positive factor in this project is the reduction of air pollution as a result of a significantly lower pollutant emissions. This goes hand in hand with improving the health of the population in Ghana. The WHO estimates that more than 16,000 people are still prematurely dying of upper respiratory tract and heart/circulatory system disorders caused by air pollution generated by cooking devices.

Less charcoal as fuel means less deforestation! This in turn has a positive impact on the forest's protective functions, such as soil erosion, water protection and safeguard of natural habitats of animals and plants.



# **BioLite Homestove Project**

Alle Regionen, Uganda

According to the UN, Uganda has lost 26.3% of its forests through logging for fuel in the period from 1990 to 2005. The current deforestation rate is over 2% per year.

On the one hand, the demand for wood for building and manufacturing furniture is rising in cities. This exacerbates the situation of the 95% rural population who need firewood for their daily basic needs.

The BioLite Homestove Project distributes cooking ovens to Ugandan households that do not have reliable access to energy and use biomass (wood, manure) to cook in the house. So far, families have been cooking on traditional ovens that are inefficient and very

polluting. The improved biomass cookers do not release any smoke and reduce toxic carbon monoxide emissions by 90%, while halving the amount of fuel used.

Crop residues or cow dung can be used for burning. For women and girls, this means less time spent on collecting wood. The deforestation of regional forest is being mitigated and local ecosystems can regenerate.

Type of project:	Energy efficiency
Project N°:	122
Certifier:	International Validation

Type of certificate:

## Gold Standard®

UN Agenda 2030 Goals (see page 55):









# AAC blocks manufacturing unit based on energy efficient technology

Budge-Budge, Kolkata, India

The project activity of Biltech is an initiative for the production of 200,000 cubic meters of AAC (Autoclaved Aerated Concrete) blocks at Budge-Budge, Kolkata. The core of this technology is the special composition of the autoclaved aerated blocks, their chemical components.

A mixture of fly ash from thermal plants, lime, cement, gypsum and aluminium powder. This formula allows the blocks to acquire the mechanical properties that are required during the hydration and curing process without sintering (modification of the material in the consolidation process).

This project also focuses on increasing energy efficiency in the production of building materials. Conventional energy sources are replaced by environmentally friendly gas and kilns which have previously been fueled with oil can be eliminated. This project also helps India to attain the Paris climate goals.

Type of project:	Energy efficiency
Project N°:	115
Certifier:	KBS Certification Services Pvt. Ltd.
Type of certificate:	VERIFIED CARB⊕N STANDARD
UN Agenda 2030 Goals (see page 55):  1 8 13 15	



# **Anaerobic digestion and heat generation at Sugar Corporation of Uganda**

Lugazi, Uganda

The climate protection project is located at the SCOUL complex in Lugazi, Buikwe District, Central Region, Uganda. SCOUL operates a large sugar production plant with a capacity of 50,000 tons. During the processing of the cane, molasses is produced within the production process and this molasses is used again to produce industrial alcohol with a capacity of 9,000 l / day in a distillery.

The project operator has completed an entire process optimization, which has been certified. This includes, for example, the new organization of the distillery with vacuum distillation instead of

atmospheric distillation as before. A lot of water is needed during the production process. The waste water is used for field irrigation or as a humidifier for the bio-composting plant. The resulting mud overflow is used as fertilizer in the cultivation of the sugar cane. A biogas plant fed from balm replaces a previous oil stove.

Type of project:	Energy efficiency
Project N°:	121
Certifier:	Carbon Check (Pty) Ltd.

Type of certificate:



UN Agenda 2030 Goals (see page 55):











All mix projects comply with the same high standard and requirement of natureOffice to offer only certified projects. The project security is ensured by the respective climate protection standards. All projects are certified and are verified and monitored according to the criteria of the respective standards, according to which they were certified.

We as natureOffice are your best partner in the field of voluntary compensation services. In order to meet and ensure our quality standard, we impose the following

- We provide you with comprehensive information and we are transparent.
- We always point out to companies the importance of avoiding and reducing greenhouse gas emissions, we show ways and provide information on opportunities to reduce CO2 emissions.

- We calculate carbon emissions in a realistic way, since not only the quality of the certificates used for compensation is decisive, but also the level of emissions to be compensated.
- We provide as much information as possible on the climate protection projects offered, so that you can see the quality criteria.
- We develop and operate our own, certified climate protection projects, among others in Africa and South America, combined with a regional commitment in Germany and Austria, and we are thus not only a reseller of carbon certificates, but also an expert in high-quality climate protection projects!



## **Deutschland Plus Mix**

## Germany, all application areas

Thanks to an initiative of natureOffice relating to Deutschland Plus, an efficient tool was created to effectively improve the state of the forests, biotopes and moors in the project regions in Germany. The lean infrastructure allows an effective use of resources and conveys the climate and species protection issues with their serious consequences for our society to a growing population group. This strengthens the regional and national commitment to our natural resources on a broad basis.

The application areas throughout Germany have been supervised by the Bergwaldprojekt e.V. for many years. Bergwaldprojekt e.V. was founded in 1987 for the purpose to protect, preserve and care for the forest, especially the mountain forest and the cultivation landscapes, as well as to promote the understanding of the connections in nature, the importance of the forest and the dependence of the human being on these resources and works together among others with volunteers to achieve the following goals:

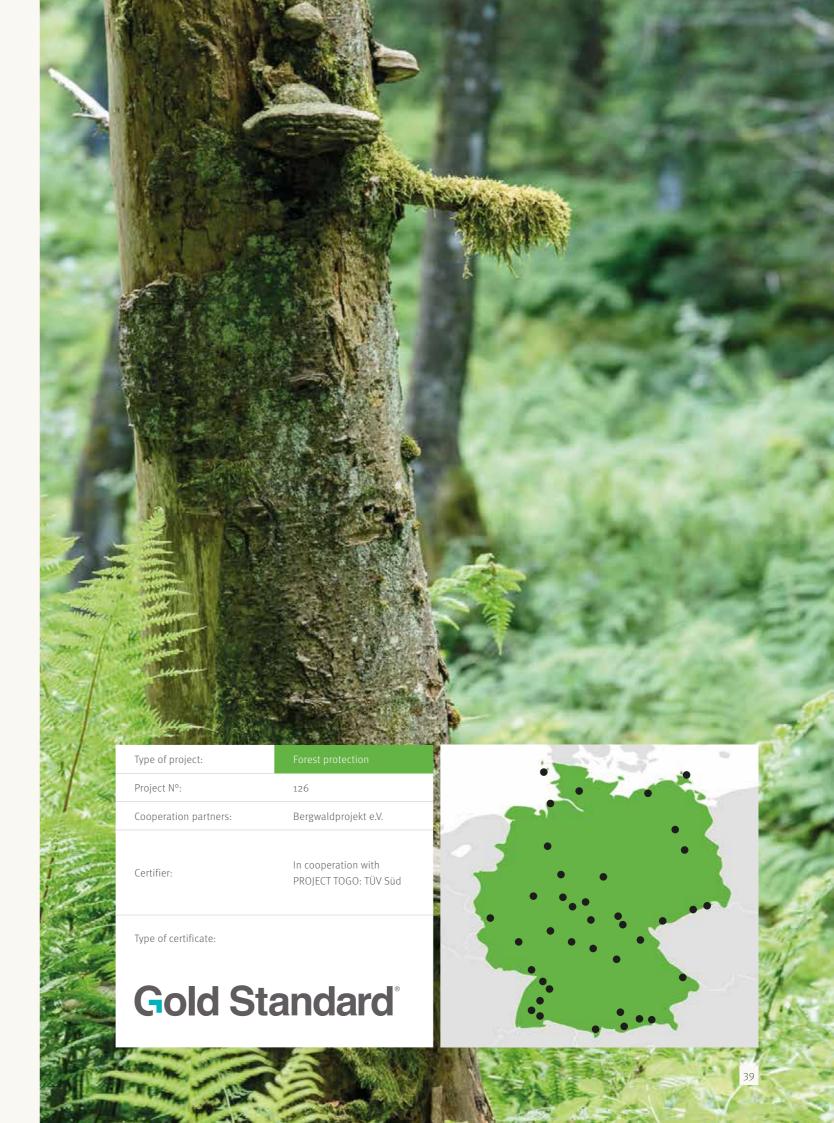
- To preserve the diverse functions of the ecosystems
- To sensitize participants about the importance and the threat of our natural resources
- To encourage a broad public to deal with natural resources in a natural way.

The additional funds generated by Deuschtland Plus are used to work even more efficiently in the intervention areas.

Deutschland Plus was developed by natureOffice as a combined certificate. This project is characterized by the fact that it covers the carbon binding or avoidance by means of international Gold Standard and VCS projects and is also combined with a natural bonus for German forests and moors.

The commitment at the regional level is covered by an additional amount of money, 100% of which goes to the Bergwaldprojekt e.V. and thus enables additional environmental and climate protection projects.





## **Forest Mix**

Brazil, Uganda, Peru

With our forest mix portfolio, we combine all possible forms of forest preservation and protection. In Africa as well as in South America, huge areas of the oldest forests are facing overexploitation if we do not begin to get involved in their protection.

Until the 1960s, the equatorial rainforest of Africa was thought to be one of the most stable ecosystems on earth. Species diversity (biodiversity) in plants and animals and the high production of biomass suggested that these life forms would have evolved over millions of years under constant environmental circumstances to the present day. Nowadays, we know that rainforests are a very sensitive ecosystem which reacts very sensitively to direct and indirect influences.

The healthy climate of the tropical forests has a great influence on the concentration of atmospheric carbon dioxide, since during the photosynthesis the same amount of carbon dioxide is absorbed as the animals emit. However, large-scale clearings interrupt this closed cycle — with devastating consequences. Fires release huge amounts of CO2 which was previously stored in the tropical forest.

More than 20% of the global carbon emissions are due to the destruction of tropical forests.

Forest projects, especially REDD+ projects are used to fund large-scale protection measures in tropical rainforests. The destruction of the forests mainly takes place through illegal deforestation or fire clearing. The areas which are consequently liberated are used for soya cultivation or livestock farming of large multinationals. We can only preserve this valuable asset in our climate stability through active protection against the irretrievable destruction of thousands of square kilometers of forest. With our forest mix, you support certified forest protection in the sensitive tropical rainforest, the extinction of many life forms and the green lung of the earth.

Our forest mix contains:

33,3 % Forest protection, Ecomapua REDD, Brasilien 33,3 % Forest protection, Kibale REDD, Uganda 33,3 % Forest protection, Brazil Nut Concessions, Peru

Type of project:	Forest protection
Project N°:	114
Certifier:	SCS Global Services, TÜV Rheinland (China) Ltd.

Type of certificate:



UN Agenda 2030 Goals (see page 55):

1 8 13 15







## **Renewable Energy Mix**

India, Mexico, Taiwan

They are wind power plants, biomass power plants and large solar fields. The technology of renewable energy generation is now already very advanced and represents a fundamentally important contribution to sustainable energy production. Renewable energy projects, especially in the emerging and developing countries are also important for a very different reason: thanks to the co-funding and additional income from the sale of CO2 mitigation certificates, these still expensive energy sources can be built and used. The major advantage for all of us is that with each new plant for the production of environmentally friendly and sustainable energy, outdated and high-emission plants can be switched off. This is an absolutely necessary form of funding, especially in the poorest countries.

The climate protection standard makes sure that only projects which meet the character of additionality, i.e. those which were not built or previously planned, without the revenue from the certificates, could be approved and certified as climate protection projects. In this way, the climate protection standards ensure that no investments already planned and built with a high level of certainty would lead to additional purchase through the certificates' purchase.

Especially for the sustainable development of emerging countries, the reliable supply of clean energy is a development driver. There are still too many power stations for the generation of energy with fossil fuels. This is not only bad for the environment but also jeopardizes people's health, especially in big cities of developing countries. By purchasing the certificates from our technology mix, you will support the development of emerging countries in the development of sustainable energy production.

Our renewable energy mix includes:

33,3 % Hydro-electric power - Sarbari II Hydropower, Indien 33,3 % Solar power - Aura Solar, Mexico

33,3 % Wind power - Infravest Wind Energy, Taiwan

Type of project:

Project N°:

115

Certifier:

Water / Solar / Wind

Bureau Veritas
Certification SAS

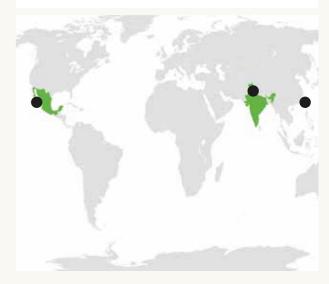
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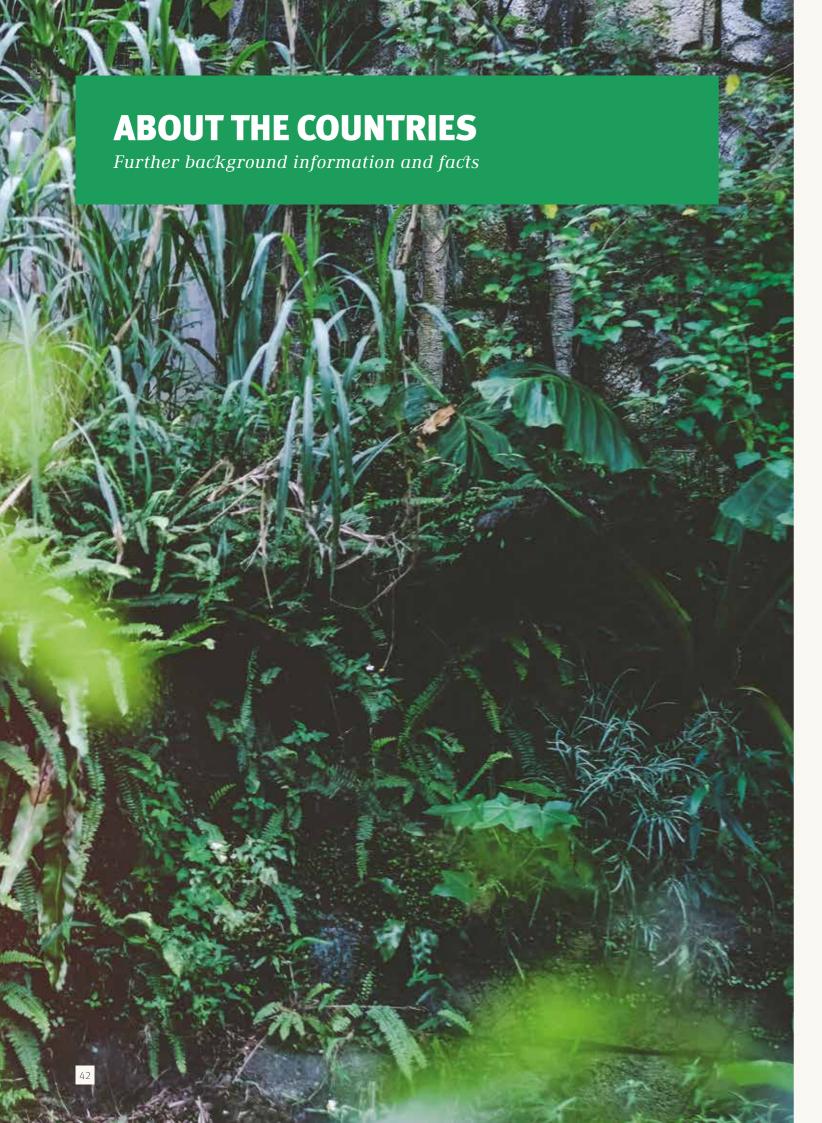
Gold Standard



UN Agenda 2030 Goals (see page 55):

1 8 13 15





## **Brazil**

## Paradigm in climate protection

For many years, environmentalists like the WWF have praised Brazil as the real world champion in climate protection. The Brazilians are permanently fighting against deforestation and have meanwhile developed into a model for climate protection. Over the last years, Brazil has reduced its greenhouse gas emissions by about one third, saving more than 750 million tons of carbon dioxide annually. This is equivalent to a value of about 2 percent of the global carbon emissions. The major success is mainly due to the drastic ban on the logging of the Amazon jungle. Since 2013, 70 percent fewer square kilometers of the forest are cleared as compared to 2005. (David Nepsted. Earth Innovation Institute, San Francisco)

The government declares land areas as protected areas, and thus contributes to the improvement of the recording of rural areas. In addition, the responsibility for environmental protection measures was shifted to the rural districts, which meant that farmers were no more allowed to be granted credits in the regions with a particularly high forest loss.

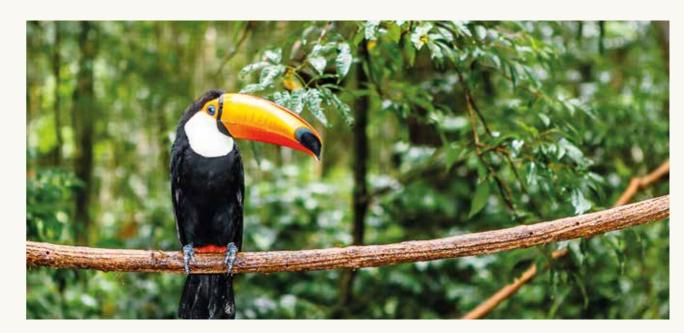
Another reason for the success of Brazil is due to the pressure from environmental organizations and large food companies such as Nestlé or McDonald on the country, driven by global trends and fear that their image could be damaged. Since 2006 for example, different campaigns of Greenpeace for instance led to the result that less than 1 percent of the soya and corn cultivation areas was deforested.

Germany also supports Brazil's efforts in climate protection. In 2015, Angela Merkel provided 550 million Euros, according to a climate protection agreement between Germany and Brazil. The funds will be used specificallyto promote renewable energies and to protect the tropical forest.

This assistance mainly aims at reducing the clearing of the tropical forest to zero by 2020. A large part of these financial resources are development loans of the Federal Ministry for Economic Cooperation and Development.

During the signing ceremony in situ, the Chancellor emphasized the great importance of the protection of the rainforest: "We are very pleased that there are ambitious developments regarding the halt and the reduction of deforestation".

You can find our climate protection projects in Brazil on pages **16** and **40**.



## Uganda

## Great goals, difficult implementation

According to WHO, 663 million people in Africa, Asia and South America have no access or only insufficient access to clean drinking water. Therefore, drinking water in plastic bottles is not only an alternative to unsafe water supply for many people, but the only way out.

Uganda is one of the centers where drinking water for the African region is bottled in PET-bottles. Indeed, this situation causes a great waste problem. However, these water bottles are imperative for many people to survive.

In 2012 already, Uganda has made an important decision regarding the climate protection: a law prohibiting plastic bags was passed. The judges decided that plastic bags "violate the rights of people to a clean and healthy environment".

The Ugandan climate policy has set itself ambitious goals which are very difficult to implement due to various problems that are located at different levels. In 2007, the NAPA was adopted. The National Adaptation Programme of Action and different programs of action include strategies of adaptation to climate change.

Countries such as Uganda are among the most vulnerable to climate change without belonging to the main polluters. Uganda and all African countries are dependent on the reduction of greenhouse gas emissions by the industrialized countries, the compensation for the financing of adaptation measures and transfer of technology in the country.

You will find our climate protection projects in Uganda on pages **17**, **20**, **34**, **36** and **40**.





## Peru

## Living with the El Niño phenomenon

Storms lasting for days and regular strong floods frequently occur in Peru. There are hundreds of thousands of people, who regularly lose their homes, and always injured and dead. This extreme weather is due to the climate phenomenon "El Niño". When the seawater off the coast of Peru is five degrees warmer than usual, strong rainfalls occur in the Andes due to the strong evaporation. The rivers swell. The global climate phenomenon causes extreme weather events in many places – drought, heavy precipitation, hurricanes and icy winters.

Peru is soften referred to as a paradise because of its biodiversity. In order to protect this situation, the government established a Ministry for Environment with the assistance of Germany and recently passed various laws to protect the environment. New protected areas have been identified and the Forestry Act has been reviewed with regard to the sustainable and environmentally sound management of forests. Penalties for illegal gold mining were tightened. The environmental idea has been anchored in the Peruvian consciousness and has increased significantly in recent years. (BMZ)

Other government objectives are to reduce poverty and expand social policy. Significant successes have already been recorded in these areas. In 2004, 58.7 percent of the population still lived

below the national poverty line, in 2013 they were only 23.9 percent (World Bank).

Nevertheless, about 40 percent of greenhouse gas emissions in Peru are caused by illegal deforestation of the rain forest. Environmental activists are in danger in Peru and it is not scarce that protesters are killed by illegal loggers.

For this reason, we have decided to include projects from Peru in our portfolio in order to support the efforts of these local groups of environmentalists, especially the indigenous people.

You will find our climate protection projects in Peru on pages **18** and **40**.

## India

# Climate protection taken seriously - through own fossil-fuel phase-out

According to the Climate Protection Index 2017 (Germanwatch), India ranks with place 20 nine places before (!) Germany in the international climate change ranking.

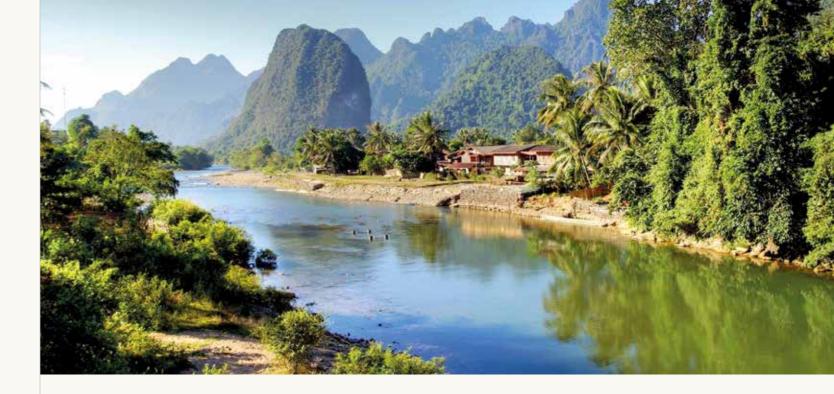
And though India is one of the ten largest carbon emitters due to its population of 1.3 billion, its per capita emissions are still at a relatively low level. However, the country's emissions are currently rising fast. About 25 percent of the increase in power consumption is covered by renewable energies, but there is still enough room for improvements.

India's government intends to quadruple the share of renewable energies by 2022. Today, power from solar panels is already the cheapest source of energy in India. All coal-fired power stations should be dismantled by 2026. In 58 developing countries, including India, wind and solar energy is now cheaper than fossil-fuel power. (Bloomberg)

With our climate protection projects from India, we support climate protection efforts of the central government, which has been a true pioneer in the past for years, compared to Germany. Germany as alleged climate protection pioneer today and probably also the next decades, is funding the brown coal distribution with billions of public money.

You will find our climate protection projects in India on pages **21**, **27**, **35**, and **41**.





## Laos

# With the solar bus and sensitization against climate change!

They have been on the way since 2013, the painted bus with 14 seats, with solar panels on the roof, a 4.3 meter projection screen on the outside, to project educational films in the area of climate change and the 8 meters long van equipped with laptop, TV set, microphone and speakers.

They travel through the Laos Democratic People's Republic with the assignment to convey playfully education on general environmental protection, biodiversity and climate change. The project is a cooperation between the local Ministry of Natural Resources and Environment (MONRE) and the German Development Agency GIZ (German Agency for International Development).

The Lao economy is heavily dependent on the natural resources of the country. Through the overexploitation of forests, the overhunting of animals and the granting of large-scale land concessions for water power plants, mining and industrial agriculture, large forest areas, the living animals and plants including the local biodiversity disappear. In addition, climate change threatens some of the country's main sources of income, such as floating rice farming. The effects of climate change, such as floods and droughts, will mainly affect the rural population whose livelihoods are forest ecosystems and small farms.

Most rural Laos people know little about the links between sustainable development and environmental protection – this also applies to decision makers in politics and business. These issues hardly play a role in public discussions.

We support climate protection projects from Laos, because we find it important to address climate change with sensitization since the childhood

You will find our climate protection project in Laos on page **22**.

## **New Caledonia**

## Threatened paradise

One of the largest sea reserves on the planet, the Parc Naturel de la Mer de Corail, is located in New Caledonia, the Pacific island group, about 3 flying hours away from the Australian Sydney. This area which is about three times the size of Germany, was protected by the New Caledonian government in 2014.

The decision for protecting innumerable animal species, including 25 sea mammals, 48 shark species and 19 bird species, is accompanied by stringent provisions on shipping, fishing and mining raw materials. In 2008 already, UNESCO recognized the New Caledonian lagoons as a world heritage site.

It is almost appeasing when the marine reserve manager, Lionel Garder, says: "We will never experience a mass tourism at this place", since the route to Europeans is too long, Australians and New Zealanders are afraid of French and Asians rather travel to

Nevertheless, investors are time and again trying to build hotel facilities on the beautiful sandy beaches, whereas the local fishermen have always been able to successfully defend themselves. The local fisherman Sivitongo Georgi says: "The islands should remain as they are. What will bring us a hotel or tourists when the sea is polluted in the end and there are no fish left?"

The inhabitants are further struggling against the nickel producers, who are ruining the environment elsewhere due to nickel mining. It is estimated that New Caledonia has got about one-fifth of the global nickel deposits. Nickel – an expensive metal for earning a lot of money. But the largest part of the deposit still rests in the earth and the desire is great.

As the local environmentalists are concerned, the first effects have been apparent for some time as a result of the mining trough a nickel group. Nickel dust from the mine becomes red mud in rivers and flows into the sea. Up to 250 meters high mountains on which plants grow, which cannot be found anywhere else in the world, are removed by the nickel group.

The nature and climate protection concept that is supported by the broad population convinces us so much that we gladly included climate protection projects from New Caledonia in our portfolio.

You will find our climate protection project in New Caledonia on page **24**.





## **Vietnam**

## The next flood is already at the door.

One of the countries worldwide which is most affected by the effects of climate change is, surprisingly, Vietnam. Experts fear a temperature increase of up to 3°C by the end of the 21st century, an increased rainfall rate and an increase in the sea level of 65 to

Beside urban areas on the coasts, the Mekong Delta, the largest contiguous rice cultivation area worldwide, is especially threatened by flood and drought disasters. Vietnam is ranked third of the largest rice exporters behind Thailand and India, and more than 50 percent of the population work in agriculture.

The Vietnamese government has recognized that the prosperity achieved can only be secured in the long term if the effects of climate change are not ignored but tackled. Therefore, the government of this country has initiated a series of environmental policy measures. A national committee for climate change has even been set up to clarify the importance of climate change and measures to fight against the effects of climate change. The aim is to achieve

climate neutrality by 2050, which is prerequisite for improving the quality of life and a more sustainable development of the economy and the whole country.

However, since all efforts will only have (hopefully) a long-term effect and the next flood is quite certain, Vietnam invests a great deal, as much as hardly any other state does in disaster relief. Vital dikes are being built, exit routes are asphalted and forests are planted to prevent soil erosion. Sensitization programs, especially in schools, are intended to show the population what measures should be taken in case a natural disaster occurs.

You will find our climate protection project in Vietnam on page **25**.

## **Taiwan**

### Ecological education and great environmental goals

Taiwan's target: 20 percent of the whole electricity production should be obtained from renewable power sources by 2025. On the one hand, Taiwan wants to reduce the immense power imports, and on the other hand, it wants to participate in the fight against global climate change. The Taiwanese government invests nearly 35 billion Euros in this energy revolution. The first step of this program is the expansion of the solar energy. The next step, or next to the solar energy preferred by Taiwan, is to invest in the construction of offshore wind power plants off Taiwan's Pacific Coast. Sufficient own energy reduces the dependence on high import prices and causes the fall in electricity prices for the population of the Pacific island. However, the self-imposed and relatively ambitious goals are achievable, since the country is the second largest producer of the photovoltaic cells in the technology sector. The island is also the market leaders in wind power.

Taiwan pays great attention to the environmental education and sensitization of people and educates its inhabitants to prevent waste and to recycle. There are no household rubbish bins like in Germany. Household waste must be disposed of at a waste collection facility and one pays expensively for this. The success

speaks for itself: between 1998 and 2011, the volume of daily waste per capita fell from 1.14 kg to only 0.43 kg. At the same time, the recycling rate rose from 1.25 percent to 52 (!) percent in the same period.

On June 15, 2015, the government passed the "Law on the avoidance of emissions and the handling of greenhouse gases" and is thus on the way to a low emission future. With our climate protection projects, we would like to support Taiwan's ecological path.

You will find our climate protection projects in Taiwan on page **26** and **41**.





## Mexico

natural forest fires.

## Agriculture and climate change

About a quarter of the 100 million Mexicans already suffer from the effects of climate change that is reflected by the occurrence of increased extreme weather. Frequent floods, caused by hurricanes in the south-east of the country and extensive droughts in the rest of Mexico, do not make life easier for the population.

About 50 percent of the land is heavily degraded as a result of changes in land use due to the impact of climate change. Large crop losses are the consequence. Between 1970 and 2005, the areas covered by vegetation decreased by 18 million hectares (more than 25 million football fields!) owing to deforestation, laid and

Many citizens' groups emerge from the displeasure of the people. They protest against the deforestation of forests in their homeland, as a result of which numerous rivers and streams dry up, which in turn leads to crop losses due to lack of water.

Mexico is now one of the first emerging countries to develop its own and correct climate protection targets which would halve the CO2 emissions by 2050 compared to the carbon emissions generated in 2000.

The German federal government supports Mexico both in the protection of biodiversity in the "green environment sector" and in

urban-industrial environmental protection in the "brown sector". In the green environment sector, corridors are established between protected areas and institutional performance is strengthened. This serves not only the biodiversity, but also contributes to the sustainable use of natural resources. In order to overcome the aggravating environmental problems in cities, sustainable solutions for urban-industrial environmental protection are developed. This will contribute to green growth in Mexico. (GIZ)

You will find our climate protection projects in Mexico on pages **29** and **41**.

## **Thailand**

### Tourists before heat collapse

Thailand records 700,000 German tourists per year. Many of them regularly and repeatedly. They should not have escaped the steady rise in temperature during the summer months. The temperatures in winter are no longer just cool but cold.

In Thailand, there are heat waves not only tourists complain about, but also the local population suffers from. The temperatures are so high that almost everything comes to a standstill for weeks and any work can hardly be carried out. People, especially tourists who are not accustomed to the hot and humid climate complain about headache, nausea and circulatory problems during this time.

In agricultural regions where rice, the basic food of people, is cultivated, people are waiting for monsoon rains. But here, the urgently needed rainfall has decreased. The consequences are lower harvest yields, rice becomes more expensive and exports decline. This in turn means less revenue and is therefore not good for the country's economy.

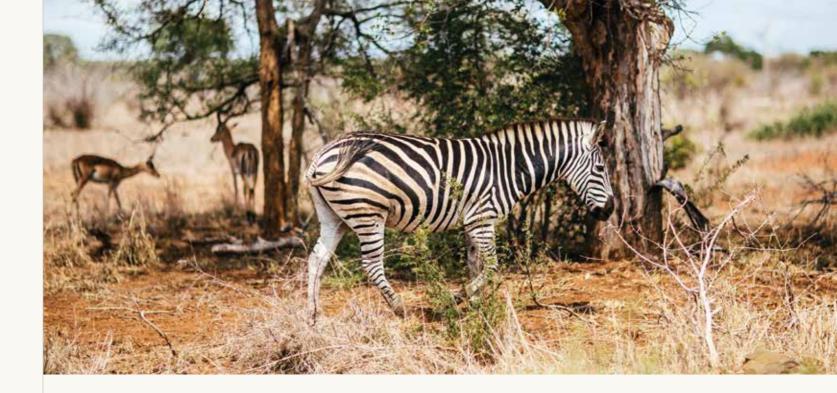
However, not only farmers in the countryside are affected by climate change, but also factories or small businesses, which often are flooded or in which one can not work due to the extreme heat.

The production stands still and workers do not receive any wages. Summa Summarum is also causing here significant economic damage and prices increase in all areas.

Last but not least, the number of tourists declines because they are insecure and afraid of a flooding like the 2011 disaster, which affected more than 2.3 million people, 40,000 people were evacuated and 53 people died.

You will find our climate protection project in Thailand on page **30.** 





## Kenia

## More than 3 million camels due to climate change

Especially the North-West of Kenia, the border area to Ethiopia, has been suffering for a long time from the accompanying phenomena of climate change. Weather records show that the average annual temperatures from 1967 to the present day have risen by about 3°C. The long rainy season becomes shorter and drier and the short rainy season becomes longer and wetter. Grazing lands are declining, declining water levels of inland lakes and ponds, dying fish populations make the lives of the approximately 1.2 million people in this region more difficult.

Bringing water home is the job of women and girls who have to cover long distances. Children are sick due to insufficient food and lack of clean drinking water.

Cows, which have traditionally been the pride of native families, are now almost a scarcity in Northern Kenya. However, there are many camels. This is due to the dust-dry soil which hardly produces plants. There is no pasture land and no more water for cattle. Camels just need prickly acacias for food. Only white farmers in Kenya still have money for cattle and keep luxury lodges for tourists in parallel with their farms.

From the worse cow's alternative, camel has now become in the eyes of the Kenyans almost a success-story. In contrast to cows which require a lot of water, camels can tolerate long dry spells and still produce more substantial camel milk, compared to cow's milk. During drought periods, only about 15 percent of the animals die. Cow herds were almost carried off up to 80 percent. For a calf, the breeders got about 180 euros, for a camel nearly three times as much

Nevertheless, Kenya is dependent on the support of the industrialized nations for measures to adapt climate change, since this is also the major cause of climate-damaging greenhouse gases. This is also the viewpoint of Pope Francis, who symbolically planted a tree on the UN site during his visit to Nairobi in 2015.

Planting a tree is, in the first place, an invitation to continue fighting against phenomena like discharge and desertification. This reminds us of the importance of protecting and managing responsibly those lungs of the planet full of biological diversity.

Pope Francis

You will find our climate protection project in Kenia on page **32**.



## Ghana

# The strongest impact of climate change affects the poor rural population

Even with our climate protection project PROJECT TOGO, we have interface with the direct neighboring country in Western Togo, Ghana. As the first independent African country, Ghana has been for many years a model which has long since found a certain stability. New skyscrapers in Accra, the capital town, a particularly beautiful national theatre, shopping centers that spring like mushrooms, SUVs stowing on the streets. For a long time, Ghana's economy grew rapidly, but today it stagnates.

On the other hand, Ghana faces major problems in many fields. Although Ghana is regularly struggling with power shortfalls, it exports a large portion to neighboring African countries, as well as to Togo. Water is highly polluted, not only in the rural areas, but also in the really developed capital town. But the problem is being tackled by the newly elected president. A newly established Ministry of Water and Cleanness has been created and new attempts are being made to clean waste water.

AThe country is involved wiht a very small percentage in global CO2 emissions. Every year, every Ghanaian emits about 700 kg of greenhouse gases. However, the impact of climate change is still large and extremely noticeable. Inland, the water levels of the lakes are

greatly reduced. The gigantic evaporation is especially devastating due to global warming, the most important lake for power production, i.e. the Lake Volta. This results in a severe energy crisis that is associated with the many power failures. Not only the population, but also hospitals for instance, suffer from power cuts. The economy also suffers.

While inland the water levels of the lakes sink, the sea level rises on the Ghanaian Atlantic coast. For some time, the houses of fishing villages on the coast have been partially half-backed in the sand, which is washed by powerful waves, that are dangerously over and over close to the houses.

Knowing that the Ghanaian government would have to make much more efforts in climate change, we are trying to support and promote rural areas through our projects.

You will find our climate protection project in Ghana on page 33.



# **The 17 Sustainable Development Goals**

All states, especially the UN member states, are called upon to cooperate and develop solutions to address the pressing challenges of the world. Climate protection projects in emerging and developing countries can make an important contribution at local and regional level.

We have listed the 17 Goals of Agenda 2030 and assigned them to the respective climate protection projects. The allocation is made according to the project operators and natureOffice.



No poverty



Zero hunger



Good health and well-being



Quality education



Gender equality



Clean water and sanitation



Affordable and clean energy



Decent work and economic growth



Industry innovation and infrastructure



Reduced inequality



Sustainable cities and communities



Responsible consumption and production



Climate action



Life below water



Life on land



Peace, justice and strong institutions



Partnerships for the goals

## **Frequently Asked Questions:**

#### What does climate neutrality mean?

Balance, neutralize each other. Climate-neutral processes are those which do not alter the equilibrium of the atmosphere. A well-balanced equilibrium between taking and giving. Products, services or companies as a whole are climate neutral if they compensate emissions after the evaluation of the individual carbon fooprint.

Climate neutrality is an environmental policy that consists of not influencing the climate through production and consumption. The assumption is that the climate system can buffer a certain amount of greenhouse gas emissions without significant impact on the climate. Climate neutrality is nowadays a quality label. Climate-neutral companies for example assume responsibility towards people and the environment. Many companies have firmly anchored the climate-neutrality goal in their environmental guidelines.

#### What is "voluntary compensation"?

The voluntary CO2 compensation (in short: compensation; Lat.: compensare = compensate; engl.: Carbon Offsetting) is the voluntary payment for an additional climate protection measure which saves the amount of greenhouse gas emissions associated with a process at another location. The terms Carbon Offsetting, compensation, voluntary compensation or compensation payment are used as synonyms in the sense that is described here.

# Should the voluntary compensation for carbon emissions the first or last step in your company's internal climate protection measures?

We as natureOffice consider the voluntary compensation for carbon emissions as the most effective measure in the short-term effective, necessary climate protection. However, the approach Avoid – Reduce (which is justified) suggests a temporal sequence of measures that does not match with the actual time sequence. It is certainly economically and morally correct to avoid and reduce emissions, but it is contrary to the goal of the global maximum reduction of CO2 emissions. Both approaches should be pursued in parallel by companies, also for reasons of cost-effectiveness. Avoid, reduce and compensate.

# The approach Avoid – Reduce – Compensate is often linked to the statement that only "unavoidable" greenhouse gas emissions should be compensated. Is that correct?

No. Looking at the corporate communication of some companies, one might believe that only the "non-avoidable" carbon emissions were allowed to be compensated. The prerequisite before the compensation is firstly to avoid emissions, subsequently to reduce unavoidable CO2 emissions through various efficiency measures

and only then to compensate for the CO2 emissions, that cannot be further reduced. As for us natureOffice, this approach certainly has its right, but inevitably results in relegating the compensation to the last place on the the ranking list of the climate protection measures. Furthermore, the avoidance and mitigation measures that have not yet been implemented, provide enough legitimacy as to why a company does not need to compensate for CO2 emissions. Likewise, the approach according to which only "unavoidable" greenhouse gas emissions should be compensated, is a prerequisite that does not exist. For, who determines what is avoidable? Is a holiday trip or a car ride avoidable? Since this is subjective, there can be no prerequisite of this kind.

#### Are voluntary compensation payments donations?

No. According to us, the costs you are paying for the compensation for your CO<sub>2</sub> emissions are not donations for climate protection, but they are a meaningful investment in a measurable reduction of your CO<sub>2</sub> emissions.

## Must compensation always be associated with a bad conscience? Is not this all about selling of indulgencies?

No. Especially in the area of the voluntary compensation market, the trade of CO2 certificates allows a certified climate protection to be struck out of the ground and to finance it over a usually very long term. Therefore, certificate buyers, whether companies, organizations or even private individuals, make an active and actual contribution to climate protection. This has clearly nothing to do with "facilitating conscience" or "freeing yourself from the CO2 sin". However, if it were possible to make a conscience easier by compensating for CO2, this possibility would be even better than nothing. Studies show that compensatory payments are not considered as "ransoms", since companies that compensate CO2 emissions also perform other climate protection measures.

#### Should I or should I not - voluntarily offset CO2 emissions?

Just sitting out climate issues by ignorance or repression cannot be the solution. It is better for example to recognize the carbon footprints of one's CO2 emissions, to reduce them and eliminate them. However, as long as this "stopping" is not yet possible, the CO2 compensation is the best way to bring down emissions quickly and particularly effectively. This leaves time for the development of further innovations or mechanisms in the field of voluntary climate protection. So: YES, it makes sense to know one's carbon footprint – and YES, compensating CO2 is an investment for the future!

### What are climate protection projects and which are they?

There are different types of projects which can be used to compensate for CO2 emissions. Some projects invest in emission savings through the increased use of renewable sources of power, others remove carbon dioxide (CO2) from the atmosphere through reforestation, while others avoid greenhouse gases in industrial processes. The projects also differ in their size. There are smaller projects which are implemented at municipal level, and larger projects that can cover a whole industrial plant. The different types of projects have differrent advantages and disadvantages, with regard to their potential for greenhouse gas reduction, but also with regard to the side effects, for example, on biodiversity or the employment situation in the region.

Climate protection projects must meet internationally recognized criteria and standards and be certified accordingly. The most important criteria are the following: Additionality: it must be ensured that a project can only be implemented owing to the money collected from the emission trading. The climate protection project must therefore be dependent on revenues from emission trading to cover funding requirements.

Exclusion of double countings: it must be ensured that the carbon emissions savings are counted only once (with the owner of the certificates). This means, in particular, that certificates may only be sold once.

Durability: emission savings must be permanent, for example the binding of CO2 in forests must take place in the long term.

Regular review conducted by independent third parties: climate protection projects must be checked on a regular basis by independent third parties (for example TÜV, SGS, DNV) in all the specified criteria.

### Reforestation or technical projects?

What advantages do afforestation projects offer for technical projects? It is only in afforestation projects that the CO2 mechanism in the biomass of the tree bound by the mechanism of photosynthesis today and immediately and permanently deprived of the atmosphere. Thus, CO2 is directly bound. Afforestation projects help us therefore to counteract the current problem of too much CO2 in the atmosphere. However, renewable energy projects only reduce CO2 emissions indirectly through avoidance in the future. For us as natureOffice, the advantages are obvious and connected with the many co-benefits that afforestation projects entail. First of all, securing and creating biodiversity, stabilizing and creating the many protective functions of the forests, such as erosion or water

protection.

Last but not least, the long-term jobs in the project areas which help improve the living conditions of the local population. These advantages for example are not offered by a wind farm. Nevertheless, it is not about what is better or worse. We need both ways to deal with current and future problems in the long term.

#### Climate protection projects in Germany?

Why are there genuine, certified climate protection projects only in Africa and India, why not in Germany? As far as the global climate is concerned, it does not matter where the CO2 compensation take place. For the economy however, it does. For this reason, climate protection projects make more sense where the natural conditions are present and the projects can be implemented cost-effectively. An important side effect: climate protection projects in the Third World promote technology transfer and actively provide assistance for self-help. A further problem with climate protection projects in Germany in connected with the possible double crediting. An indirect double crediting could occur if, for example, electricity from a wind farm is replaced by fossil electricity from a power station. The generation of renewable power would relieve the national emission budget and generate additional emission rights. Forest areas are subject to strict controls and conditions.

Thus, forest areas must be absolutely reforested after fire or windbreak. No climate protection project can arise from this reforestation since the major criterion of additionality is failing in this case. We as natureOffice, however, would like to do the one thing without leaving the other, since there are especially in German varied forest problems we face and which are caused by climate change. This is why we have teamed up with the well-known Bergwaldprojekt e.V. and launched the combined certificate Deutschland plus.

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## **Definitions:**

#### **Gold Standard**

With the participation of the WWF and 40 other NGOs, the Gold Standard was developed as a rule for the careful installation of climate protection projects. In order to certify climate protection projects with the Gold Standard, high requirements with regard to additionality, sustainable development and involvement of the local population in the project must be met. In 2013, the methodology of the Gold Standard was extended by taking over the Carbon-Fix Standard so that, in addition to projects related to renewable energies, energy efficiency and waste management, land use and forestry projects can now be certified with the Gold Standard.

#### VCS

More than half of global voluntary emission reductions are validated and verified according to the Verified Carbon Standard (VCS). The Standard specifies requirements for the determination of CO2 savings for the different types of projects, such as water power or wind power. Climate protection projects in compliance with the VCS must additionally be checked by independent third parties. The double counting of CO2 savings must be excluded. The certificates generated from these VCS projects are referred to as Verified Carbon Units (VCU).

#### CCBS

The Climate Community and Biodiversity Alliance (CCBA) is a partnership of international NGOs and research institutes and was founded in 2003. A certification with the CCBS is only possible in addition to an already existing certification such as the Gold Standard or the VCS. Projects that are additionally certified with the CCBS meet fourteen criteria. The goal of the project is to support land use and forestry projects that meet further social and ecological criteria in addition to CO2 reduction. Projects which have exceptionally positive impact in the field of adaptation to climate change, promotion of local communities and preservation of biodiversity are furthermore granted the CCB "Gold Level" status.

#### **Social Carbon Standard**

Like the CCBS, the Social Carbon Standard (SCS) is also an additional standard that conducts a detailed analysis of the social, ecological and economic impact of a climate protection project in order to ensure a sustainable development with the involvement of the local population.

### CDM and JI - binding

The principle of CO2 compensation is based on the mechanisms of the Kyoto Protocol – Clean Development Mechanism (CDM) and Joint Implementation (JI). These mechanisms are meanwhile important tools in international climate protection. They provide the committed Nations some flexibility to attain their reduction goals. Whereas climate protection projects are being implemented in developing and emerging countries through the CDM, the JI mechanism is implemented in developed countries that have committed themselves to the Kyoto targets. For emerging and developing countries, the CDM is a key driver for the transfer of clean technologies and the resulting sustainable economic development. CDM certificates are called Certified Emission Reduction (CER) and JI project certificates are called Emission Reduction Unit (ERU).

### **VER - voluntary**

VERs are emission reduction bonuses from voluntary climate protection projects. Each project is verified by independent service providers that check the quantity of the respective emission savings at regular intervals. Emission reduction certificates are generated by these projects in the same amount of savings, the so-called Verified Emission Reduction (VER). Companies which are not subjected to compulsory emission trading can use these certificates to compensate for their emissions by investing in a global sustainable development. The voluntary market also allows access to financing through the purchase of certificates, even for smaller projects with a relatively small CO2-saving quantity. Beside CO2 reduction, many projects provide further social CO-benefits that promote sustainable economic development in the project area.

#### REDD/ REDD+

2005, within the scope of the 11th UN Framework Convention on Climate Change in Montreal, the establishment of a financial incentive for developing countries was addressed to avoid deforestation and reduce CO2 emissions. In 2007, this incentive was adopted during the follow-up conference held in Bali. REDD (Reduction Emissions from Deforestation and Forest Degradation) and REDD+ (further development of measures) is a series of measures or guidelines that are used for sustainable forest management and afforestation of new forest areas.

