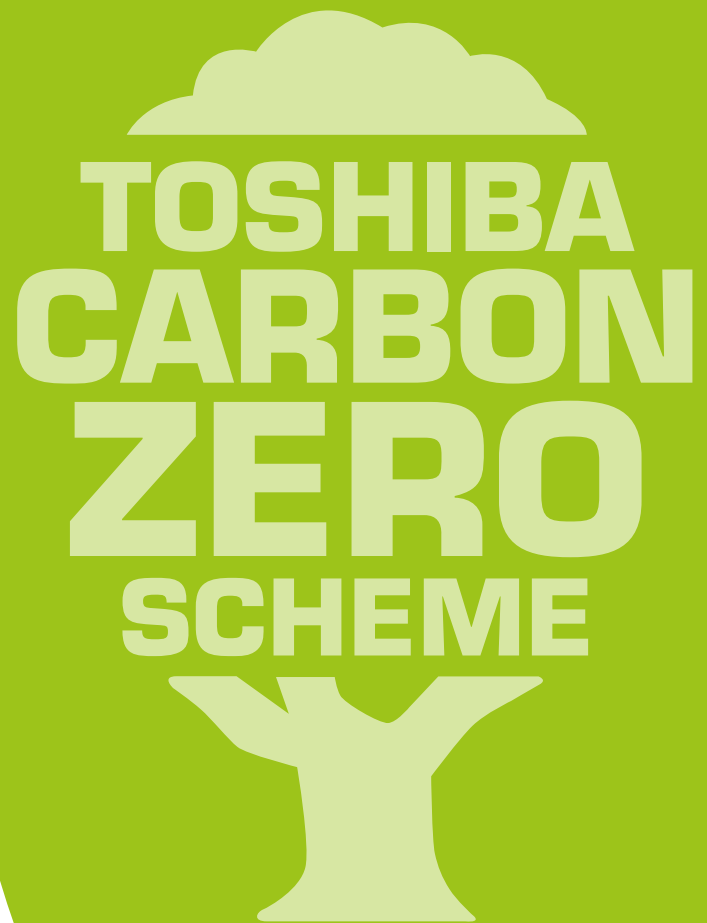


Impact Report 2009-2015

- > This document provides an impact report on the carbon offset work of Toshiba Tec from June 2009 to December 2015
- > The Toshiba Carbon Zero Scheme has been developed in cooperation with CO2balance



BACKGROUND

Since 2009, Toshiba TEC has been working with leading carbon management company CO2balance, to calculate and offset the carbon dioxide emissions created from the manufacture, distribution and operation of its MFP products supplied to the European market – to achieve CarbonZero status.

The total carbon offset from June 2009 to December 2015 was 430,150 tonnes of CO₂e. During this period a number of verified carbon reduction projects in developing countries have been supported.

Carbon equivalents:

To put that into context this value has some surprising comparisons; 430,150 tonnes of CO₂e is the carbon equivalent to:

- > 127,233 return flights from Düsseldorf to Tokyo
- > Driving the circumference of the earth 56,121 times
- > The annual emissions from 95,589 European homes
- > Lighting 10,001,130 million energy saving light bulbs for a year

This first section of the impact report explains the additional community and environmental benefits over and above simple carbon saving of the investment in the CO2balance Kenyan Energy Efficient Stove Project. To date this project has received 149,257 tonnes CO₂e or 35% of the total support to date. The funds are used to sponsor the distribution of stoves to poor households and the maintenance of those stoves for the first seven years.

In addition to the Stove Project, a total of 66,184 tonnes CO₂e has been offset through the Uganda Borehole Project, which rehabilitates broken boreholes to provide families with clean water, removing the necessity to boil the water to purify it.

About CO2balance

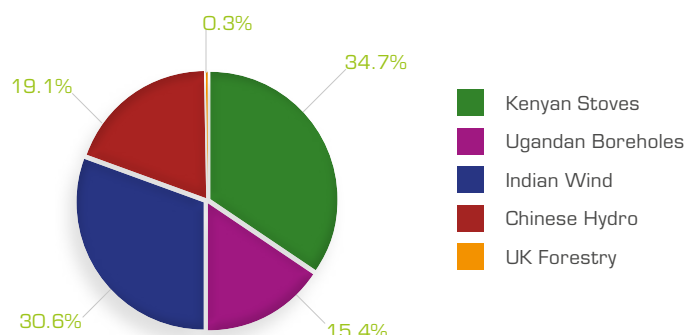
Established in 2003, CO2balance UK Ltd is a leading, UK based, carbon management provider offering carbon calculation, management and reduction services to leading blue chip companies including, BSKyB, Toshiba and Gaz De France.

SUMMARY

The tables below show a summary the total of CO₂ offset per project since the project began in 2009, along with the figures for the last reporting year of 2015:

June 2009 to December 2015

Project	Tonnes CO ₂ Offset
Kenyan Stoves	149,257.73
Ugandan Boreholes	66,184.26
Indian Wind	131,656.58
Chinese Hydro	81,949.69
UK Forestry	1,101.94
TOTAL	430,150.20



January 2015 to December 2015

Project	Tonnes CO ₂ Offset
Kenyan Stoves	24,288.56
Ugandan Boreholes	24,288.56
Indian Wind	24,288.56
TOTAL	72,865.68

As a project developer CO2balance UK Ltd creates African Gold Standard and CDM projects that focus on social, health and community benefits to the families within the project area, in addition to carbon savings. For more information about CO2balance please visit www.co2balance.com



CARBON OFFSET PROJECTS

Kenya Energy Efficient Stove Project (since 06/2009)

The Kenyan Energy Efficient Stove Project builds energy saving cooking stoves for villages in Kenya. These brick stoves result in 50% reduction in the need for firewood and thereby prevent carbon from being emitted.

In addition to carbon prevention it also provides families with a cost and time effective method to cook with. The reduced need for firewood helps to prevent deforestation, creating knock on benefits to the wildlife in terms of habitat, biodiversity and flood prevention.

It is also a healthier method of cooking as it reduces in-door smoke by half. In-door smoke is a serious problem in Africa and the World Health Organisation dubbed it the “kitchen killer”, as it is responsible for nearly 2 million deaths in Africa every year.

Other co-benefits of the project include:

- > Reduced deforestation and degradation of surrounding forests
- > Reduced soil erosion, nutrient loss and risk of flooding
- > Reduced cooking and wood collection time; householders can spend more time on other household tasks, as well as schooling and supervising children
- > Reduced exposure of firewood collectors (mainly women) to hazards in remote areas
- > Reduced burns and injuries from exposure to an open fire

Project Location

There are numerous project locations within the Kenyan Energy Efficient Stove Project run by CO2balance; the project locations for Toshiba’s offsetting work are the “Aberdares”, “Shimba Hills” and “Kisumu” projects”.



The project is located in and around Kisumu, which is Kenya’s third largest city and the principal city of western Kenya. This is an administrative district of Nyanza Province, Kenya. It is one of the poorest areas in Kenya characterized by high incidences of maternal and infant mortality, with most of its people suffering from unemployment, poor health and poverty.



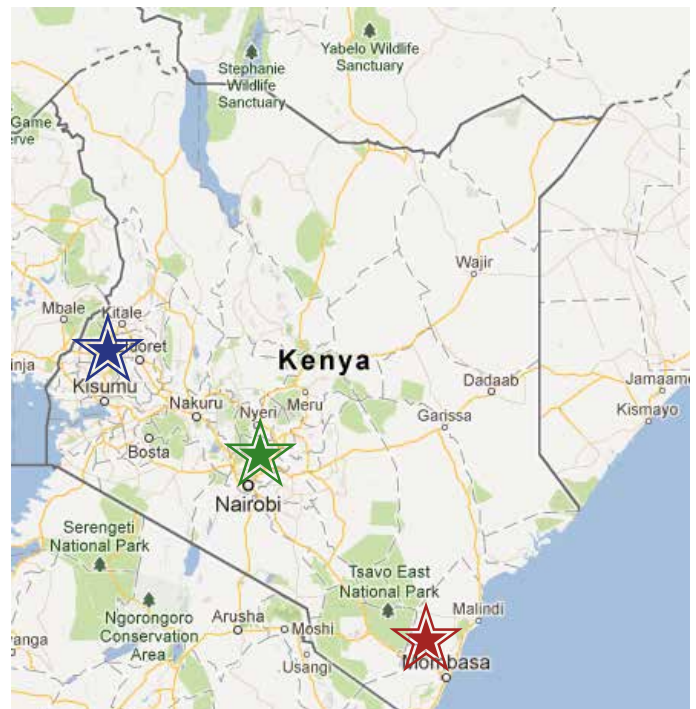
The Aberdares Range is a 160 km long mountain range of upland, north of Kenya’s capital Nairobi and just south of the Equator with an average elevation of 3,500 meters.

It forms a section of the eastern rim of the Great Rift Valley. The lower slopes are lush fertile farmed, whilst higher areas are known for their wildlife. This rich habitat is home to numerous species of plants and animals including the rare Black Rhino.



The Shimba Hills is an area of coastal rainforest, woodland and grassland. It is an important area for plant biodiversity – over 50 % of the 159 rare plants in Kenya are found in the Shimba Hills, including some endangered species. It is also a nationally important site for birds and butterflies.

The communities that live there are amongst the poorest rural people in Kenya. Surviving on less than a dollar a day they rely on the dwindling forest resources to sustain daily life. This project eases their workload and protects vital natural resources from over exploitation.



Impacts

The offsetting commitment made by Toshiba TEC between 2009 and 2015 has resulted in numerous impacts to the local communities within the project areas of Kenya. The table below provides a summary of these impacts related to the Kenyan Energy Efficient Stove Project:

Impact Sector	Impact	Quantitative Data ¹⁾
Environment	CO ₂ e prevented	149,258 tonnes
	Wood saved	129,854 tonnes
	Area protected	374.14 hectares
Social	Number of stoves built	7,107
	Time saved	85,290 days
	Children impacted	14,215
	Adults impacted	5687
	Old people impacted	7,107
	Total people impacted	27,009
Economic	Working time saved	682,321 hours p.a.
	Money saved per household	21 days wages p.a.

Health Impacts	Quantitative Data ²⁾
Condition	Likely reduced cases from project support
Respiratory illness (Lower Chest /Lung)	9,453
Asthma	9,951
Serious Ear Nose and Throat irritation	7,463
Total reduced instances of serious illness attributable to indoor smoke	26,866

¹⁾The data from the impacts are based on the field work carried out by CO2balance within the project locations in Kenya. The data that is gathered is in line with the requirements of the Gold Standards as part of the annual Monitoring Surveys. These Monitoring reports are available on the Gold Standard Registry. Data is then cross compared against national averages in Kenya to ensure accuracy. Assumptions and extrapolations have been used where relevant.

²⁾The Health Data is derived from the following sources R. Perez-Padilla et al, 2010. 'Respiratory health effects of indoor air pollution' in International Journal of Tuberculosis and Lung Disease, vol. 14 no. 9, pp 1079-1086 . Kenya National Bureau of Statistics. (2008). Kenya Integrated Household Budget Survey. Ministry of Planning and National Development, p. 1-300.



Ugandan Borehole Project (since 04/2013)

The project is based around the rehabilitation of boreholes in Northern Uganda, supplying families with fresh clean water. As well as the natural health benefits it means that families no longer have to boil the water, saving firewood and thereby preventing carbon emissions from being released.

Access to safe drinking water is a serious issue in Africa affecting the health and well being of local communities. A survey by the International Institute for Environment and Development (2009) revealed that there are an estimated 50,000 defective water supply installations (IIED 2009). In addition it was estimated that 40-50% of hand pumps in sub-Saharan Africa were not working (Diwi Consult & BIDR, 1994).

In addition to funding the borehole rehabilitation, the carbon credits that this project produces creates a funding mechanism to deliver a long term maintenance programme for the boreholes.

Impacts

The impacts to the community and wider environment as a result of Toshiba TEC's support for this borehole project in Uganda are as follows:

Project Location

The project is located in the Kole District, in Northern Uganda, near the town of Lira.



Impact Sector	Impact	Quantitative Data
Environment	CO ₂ e prevented	66,184 tonnes
	Wood saved	46,759 tonnes ¹⁾
Social ²⁾	Infants (< 5) impacted	8,303
	Children impacted	12,831
	Adults impacted	16,605
	Total people impacted	37,739
Health ³⁾	Clean water supplied	82,649,137 litres ¹⁾
	Likely cases of Diarrhoea avoided	645
	Likely fatalities avoided	52

¹⁾Wood saved and clean water supplied - Calculations based on field measurements conducted by staff contracted to CO2balance and are conducted according to the requirements defined by the Gold Standard. Monitoring data is available on the Gold Standard registry.

²⁾People Impacts - Calculations based on field measurements conducted by staff contracted to CO2balance and survey data from the Uganda Bureau of Statistics.

³⁾Health Impacts - Calculations based on number of diarrhoea incidences per 1,000 people recorded in Northern Uganda reported by Barungi & Kasinye, 2011 and the reductions in diarrhoea and diarrhoea fatalities expected after installing a borehole reported by the World Health Organisation.

CASE STUDY

“We used to get worms in that water which were reddish in colour and had long tails. Whenever it rained, our old water source would get flooded hence causing us more work of digging the water source again.

At this time, water could not be fetched by young children because it was deep for them. In addition we had health problems as well. There were serious complaints of stomach problems as we used to share the same water source with the animals and some people used to bathe in that water source. Water was scarce and hard to collect especially during the dry season.”



“The water from the borehole which is a short distance away is very clean, very sweet and easy to pump. It serves a very big number of people without getting finished. The colour of that borehole water does not change even if it rains or in the morning compared to the former water source. We have no complaints of stomach problems especially since the borehole water is treated occasionally. We parents also confidently allow our children to fetch water since it's secured and are also glad that we do not share water with animals any more. As a result of this initiative less firewood is used hence saving time and fire wood.”

— Joyce Acio, a 48 year old widow and a resident of Adekirwai village, Abukamola/Uganda

Other projects

Wind Farm Generation, India

(since 06/2009)



This project takes place under the verified carbon standard

The selection of projects are classed “bundled projects”, in that it is based around the construction of numerous wind turbines in different areas of India, including the Tamil Nadu region where turbines are installed in different passes (Aralvaimozhi, Senkottah and Palghat passes), where wind speeds is constant.

The Project generates electricity using renewable energy based on wind power which is supplied to the state grid. It hence displaces the electricity which would have otherwise been generated from fossil fuel fired power plants connected to the grid.

Impact Sector	Impact	Quantitative Data
Environment	Carbon reduction	131,657 tonnes

Small Scale Hydro Generation, China

(06/2009 -03/2013)



This project takes place under the verified carbon standard

Hydro Power: The electricity generated by the hydropower units displaces the electricity on the country’s national Power Grid, which is primarily supplied with fossil fuel generated power ensuring that genuine greenhouse gas emissions reductions are made. Small scale projects typically consist of several 8MW hydro units; run-of-river projects are based around the diversion of water through a hydropower tunnel and then rejoining the river, reducing the need for a dam.

Impact Sector	Impact	Quantitative Data
Environment	Carbon reduction	81,950 tonnes

UK Forestry Project, Somercombe Wood

(06/2009 - 09/2013)



Somercombe Wood is located in the Blackdown Hills Area of Outstanding Natural Beauty (AONB) on the Somerset/

Devon border in the West of England. The trees that have been planted at the woodland will naturally absorb carbon as they grow, and are a mix of broadleaf native trees, including English Oak, Ash, Silver Birch and Alder. The land is owned by CO2balance, to ensure complete control over the long term future of the trees.

Impact Sector	Impact	Quantitative Data
Environment	Carbon reduction	1,102 tonnes

External Project Verification

The Kenyan Energy Efficient Stove Project and Ugandan Borehole Project are externally accredited through the Gold Standard. An internationally respected standard that assesses the social and community benefits to the region in addition to carbon saving. The Gold Standard Foundation is a Swiss based, non-profit organization providing certification of premium quality carbon credits in both the voluntary and compliance markets.

The thorough and extensive methodology and approval process of the Gold Standard is designed to certify the highest quality energy efficient and renewable energy carbon reduction projects. All Gold Standard certified projects demonstrate real and permanent emissions and sustainable development for the local communities that are measured, reported and verified.

The Gold Standard quality benchmark is derived from the actions of the Kyoto Protocol and its methodology is currently endorsed by over 70 non-governmental environmental and development organizations worldwide.



About Toshiba Tec

Toshiba Tec Germany Imaging Systems GmbH is part of the globally operating Toshiba Tec Corporation, active in various high-tech industrial sectors.

Toshiba Tec Corporation is a leading provider of information technology, operating across multiple industries - ranging from retail, education and business services to hospitality and manufacturing. With headquarters in Japan and over 80 subsidiaries worldwide, Toshiba Tec Corporation helps organisations transform the way they create, record, share, manage and display information.

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Together Information is Toshiba's vision for how people and organisations create, record, share, manage and display ideas and data.

It is based on our belief that the most successful organisations are those that communicate information in the most efficient way .

We make that possible through an integrated portfolio of industry-specific solutions, all of which reflect Toshiba's commitment to the future of the planet.

For more information please visit www.togetherinformation.com