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Environmental Audit 2008

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Managing Director's preface

Dear Reader,

For the last ten years GTZ has produced an annual audit of its environmental performance. What has changed during this time? Has the effort been worthwhile? We believe that it has. Over the past decade environmental management has enabled many improvements to be introduced. I shall mention just a couple of examples here.

Since 2003 GTZ has taken part in the 'bike & business' campaign run by the German cyclists' association ADFC. More than 250 members of staff now cycle to work from spring through to autumn. Since 2003, too, GTZ Head Office has been using green electricity. Compared with 'normal' electricity this saves around one thousand tonnes of CO₂ emissions per year. 2003 also saw the introduction of the 'Jobticket'. 939 people, or 68% of the staff, now make use of this scheme. In 2006 the main administration building was completely refurbished and made energy-efficient. The technical systems in the other buildings are also being updated in a rolling programme of modernisation. This reduces our annual consumption of heating energy by about 40%.

We recognise the importance of environmental communication within the organisation. On our intranet site we therefore post practical tips and information dealing, for example, with cycling to work, green electricity or the environmental audit process. Environmental 'tips of the week' are displayed on an information screen. Once a year the environmental affairs manager presents the latest environmental audit at an employee meeting. For the last few years GTZ has actively marked World Environment Day on 5 June with a varied and interesting programme for its staff. Sectoral issues – such as climate change, sustainable mobility, energy efficiency and renewable energies – are not neglected either. Staff are advised on how they can switch to green electricity at home, or informed of the size of their personal carbon footprint.

Our achievements in corporate environmental performance are also recognised outside our organisation. In June 2008 GTZ received the CSR Mobility

Award, presented by the Bundesdeutscher Arbeitskreis für Umweltbewusstes Management (B.A.U.M.), the Verkehrsclub Deutschland (VCD) and the trade journal 'Der Mobilitätsmanager' (DMM) for an environmentally aware travel management scheme that is particularly innovative and worthy of imitation.

In December 2008, following an external inspection, we were the first organisation in Hesse to be designated 'bicycle friendly' by the ADFC.

The GTZ Offices are our calling cards in partner countries. In Mozambique the staff of all the programme and project offices drew up a combined environmental audit. In 2008 the GTZ Offices in Chile, the Dominican Republic, Namibia, Niger, Pakistan, Paraguay and Tanzania produced their first environmental audits and identified areas in which there is potential for improvement. We are delighted that partner institutions are also showing great interest in the issues to which we are committed. For example, an environmental tour of GTZ Head Office is now a regular feature of the programme for visiting delegations from partner countries. When GTZ Offices draw up environmental audits we take the opportunity – whenever it presents itself – to advise interested partner institutions on this form of environmental management.

Since 2003 it has been a tradition that our representation in Berlin produces its own environmental audit. In 2008 AgenZ, GTZ's agency for market-oriented concepts in Frankfurt-Rödelheim, also drew up its own audit. Both documents are integrated in GTZ's environmental audit.

I wish you stimulating and informative reading!

Wolfgang Schmitt
Managing Director



Objectives and organisation of environmental management at GTZ

In its environmental mission statement GTZ makes a clear commitment to sustainable business management and natural resource conservation.

All GTZ staff work to realise this mission, whether at Head Office, at other locations in Germany or in the field in partner countries. To ensure that environmental policy is implemented and environmental targets are met, it is important that corporate environmental performance is continuously improved and that a functioning environmental management system is in place. To this end GTZ has since 1999 used a systematic environmental management procedure based on the EFQM model¹ that is adapted and integrated into quality management. This enables overarching environmental management issues to be incorporated into the company's environmental targets.

While GTZ's detailed environmental report is published every two years, the environmental audit continues to be produced annually. The audit serves primarily to ensure that corporate environmental parameters are systematically collated and that –

where necessary – monitoring and improvement measures are initiated. This means that once a year GTZ can without excessive effort or expense check the effectiveness of its corporate environmental management and pursue the process of continuous improvement. In 2006 the environmental targets were fully revised; following an evaluation they were again adjusted at the end of 2008. The various organisational units now bear greater responsibility. The current environmental targets are summarised in the chart.

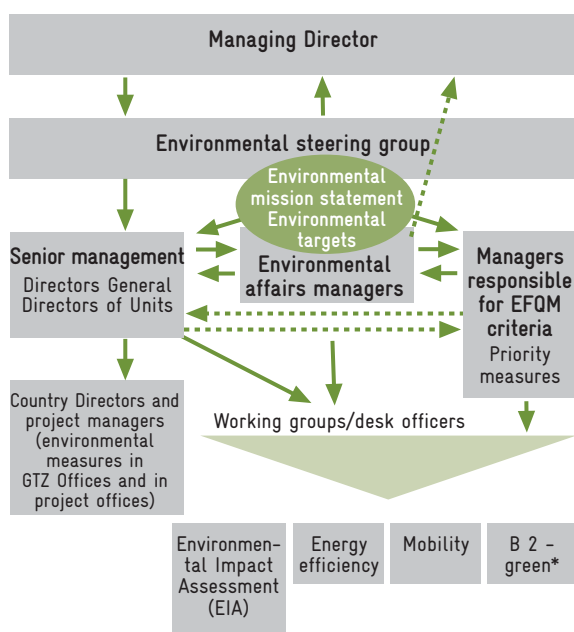
The Environmental Audit 2008 builds on the preceding year's environmental report. It covers the report period January to December 2008 and includes the Eschborn, Berlin and Frankfurt-Rödelheim sites. An additional important aim is to increase the involvement of the GTZ field structure in the implementation and reporting of environmentally relevant measures. The guidelines for carrying out environmental audits in the GTZ field structure that were drawn up in 2004 are designed to facilitate implementation.

1999



The first environmental audit is produced for GTZ Head Office in Eschborn. Paper consumption amounts to around 101 tonnes, energy consumption is just under 11.5 million kilowatt-hours, water consumption is close to 17.3 million cubic metres. Waste arisings are around 0.5 million kilograms and CO₂ emissions are in the order of 17.7 million tonnes. Most staff come to work by car. The GTZ office in Managua is the first office abroad to produce an environmental audit.

¹ EFQM: European Foundation for Quality Management
The EFQM model for business excellence is an organisational model that is intended to facilitate a holistic view of an organisation. It defines who is responsible for ensuring that criteria are met and involves a self-assessment process. This has the advantage that critical analysis takes place within the organisation itself.



* Corporate environmental management working group of GTZ's Country Department Asia, Latin America.

Internal and external environmental communication

Through their behaviour GTZ staff promote the successful implementation of environmental management at GTZ. To encourage members of staff to act in environmentally friendly ways, the environmental affairs managers regularly circulate information, usually via the internal communication channels which include the staff periodical 'intern', the intranet news portal, the information screen in the foyer of Head Office and the intranet pages of GTZ's environmental affairs manager. In addition GTZ marks United Nations World Environment Day with a day of action based on the year's theme. In 2008 the theme was climate change and staff were given the opportunity to find out about green electricity, the 'bike & business' campaign² and their personal carbon footprint.

The guest at our main event on World Environment Day was Dr Thomas Schauer, director of the European Support Center of the Club of Rome in Vienna. In his talk on 'The limits and price of growth' he reported on the experience of the Club of Rome over 40 years and described the role of climate-friendly and sustainable development in an ecosocial market economy.

'Applying sustainable economic principles' was also GTZ's theme for the year in 2008.

By the end of 2008 more than 20% of GTZ offices abroad had already drawn up an environmental audit. In 2009 the GTZ Offices in Algeria, China, Indonesia, Mexico and the Philippines will produce audits for the first time. The target is for environmental measures to have been implemented at 30% of the project and office locations abroad by the end of 2009.

	2003	2004	2005	2006	2007	2008	Target for 2009
Electricity consumption (kWh per staff member)	3,000	2,960	2,500	3,280	3,150	2,968	2,550
Δ Change from 2003 (%)	0	-1,3	-16,7	9,3	5,0	-1,1	-15,0
Heating energy (kWh)	6,796,125	6,757,175	5,060,000	5,442,100	4,100,270	5,281,550	4,757,285
Δ Change from 2003 (%)	0	-0,6	-25,5	-19,9	-39,7	-22,3	-30,0
Potable water consumption (l per staff member)	7,850	6,560	7,670	6,850	6,160	7,919	7,070
Δ Change from 2003	0	-16,4	-2,3	-12,7	-21,5	0,9	-10,0
Non-potable water consumption (as % of total consumption)	not determined	54	52	49	57	45	>50
Wastes for final disposal (kg per staff member)	73	78	53	79	49	53	51
Δ Change from 2003	0	7	-27	9	-33	-27	-30
Paper consumption (sheets per staff member)	10,965	10,749	10,222	9,735	9,550	7,602	8,772
Δ Change from 2003	0	-2	-7	-11	-13	-31	-20
Proportion of recycled paper (%)	94	97	99	99	99	98	100



GTZ's environmental targets for the Eschborn site from 2003 to 2008

² Since 2003 GTZ has taken part in the 'bike & business' campaign of the German cyclists' association ADFC, which encourages people to cycle to work.

Paper

The challenge

Paper production harms the environment: it starts with timber logging and transport and continues with the use of water, energy and chemicals in the manufacturing process, which yields liquid effluent and solid waste that must be disposed of. If the timber comes from forests that are not sustainably managed, this leads to major changes in the forest fauna and flora. In order to protect the environment and reduce resource consumption, it makes sense to use paper products that are recycled or come from sustainably managed forests.

In a service-sector company with its typical office and administration activities, paper is one of the most frequently used materials. Despite the advance of electronic communication and filing systems, the paperless office is as yet still a pipe dream. Technical and organisational factors play a large part here. But individual behaviour and staff working habits also have a significant impact on paper consumption. For example, many people prefer to print out long documents rather than read them on-screen.

2000

Water consumption has dropped sharply from the previous year, and energy consumption has been further reduced. Moreover, less waste is generated. In order to further improve eco-efficiency, an extensive package of measures is proposed. The key items are: improving energy systems in Houses 1 and 2, adopting mandatory minimum environmental criteria in procurement and reducing paper consumption.



Our targets

In 2003, GTZ's environmental steering group set itself the target of reducing the company's total paper consumption by 25% by the year 2009. In recent years, however, GTZ has taken on a large number of new staff. In 2008 it was therefore decided to apply this target not to total paper consumption but to individual paper consumption per staff member.

A second target was to increase the proportion of recycled paper to 100% by 2009. It is, however, apparent that we shall not meet this target in full. With the current state of technology, special papers such as watermarked or photographic papers are not available in recycled form. For the time being, therefore, a 100% recycled paper ratio remains a target to be aimed for.

What we are doing

Staff can receive faxes via their e-mail programme and do not necessarily need to print them out. The electronic document management system means that filing is largely paperless. Electronic forms for official travel applications and settlement of the associated expenses, and for holiday requests ('urlaub online') also prevent the accumulation of large paper files.

In addition, division heads and office managers are given tips on how to save paper, which they pass on to their staff. For example, staff were advised on how to use the duplex function of printers and photocopiers.

The results

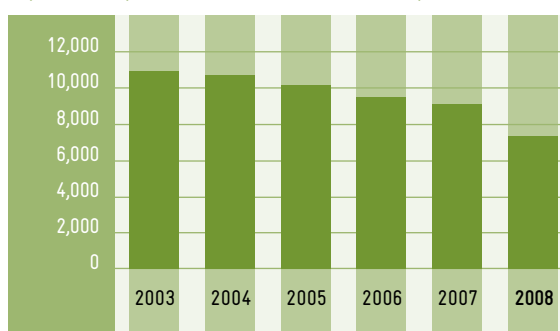
Recycled paper now constitutes more than 98% of the paper used in the offices. This proportion has in the past been higher, namely at more than 99%. It is clear that increased use is being made of technical papers and papers with special characteristics.

Against the 2003 baseline, per-capita paper consumption fell in 2008 by 31%; it now amounts to around 7,600 sheets of A4 paper per staff member. In absolute terms paper consumption has been reduced by more than two million sheets per year; it is 4.5 million sheets less than the total recorded in the first environmental audit in 1999.

Outlook

As part of the restructuring of output management, personal printers will from 2009 be replaced by printers for each floor of the building that are more environmentally friendly to use. In future the duplex function will be set in the software as the default mode of operation.

Paper consumption at the Eschborn site (sheets per staff member)



	2003	2004	2005	2006	2007	2008*
Paper consumption (sheets)	12,675,500	12,124,372	11,469,087	10,913,100	11,741,490	10,492,757
of which photocopies (sheets)	3,763,883	3,706,570	3,711,839	3,621,007	3,581,811	2,626,642
Paper consumption (sheets per staff member)	10,965	10,749	10,222	9,735	9,550	7,602
of which printouts (sheets per staff member)	7,709	7,463	6,914	6,505	6,636	5,699
of which photocopies (sheets per staff member)	3,256	3,286	3,308	3,230	2,914	1,903
Recycled paper (as % of total)	94.0	97.0	99.5	99.4	99.1	98.1

Paper consumption at the Eschborn site from 2003 to 2008

* Printouts are estimated, photocopies are calculated.

Solid waste

The challenge

Untreated waste can no longer simply be tipped into landfill, but incinerating it also produces emissions. While incineration enables the energy content of the waste to be used to generate electricity and supply district heat, it is better to avoid waste in the first place or to recycle. Using recycled materials saves raw materials and reduces emissions associated with production processes.

Our targets

Our target is to reduce the per-capita quantity of wastes remaining for final disposal by 30% from the 2003 baseline by the year 2009.

What we are doing

We focus on rigorous waste segregation and strive to make this easy for our staff. In the office rooms at GTZ Head Office there are separate bins for paper – which makes up the largest part of the waste – and for wastes destined for final disposal. In the staff

kitchens and at the coffee points there are additional bins for packaging wastes (which go to the separate Green Dot system) and glass. Canteen waste is sent to a biogas facility.

The results

The specific level of total waste arisings of 249.4 tonnes in 2008 is the lowest since the environmental auditing process began ten years ago. We recycle 70% of our waste. This continues the positive trend of previous years. In 2008 the total waste arising per staff member fell by 14% from the previous year.

The largest contribution to this result has been achieved by optimising the functioning of the grease traps and improving the separation of canteen waste.

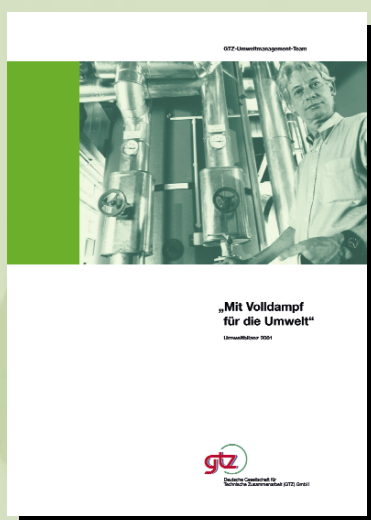
By contrast, the quantity of electrical waste in 2008 was five tonnes higher than in the previous year. This had a simple reason: old electrical equipment was replaced with new, energy-efficient units in order to reduce electricity consumption.



Solid waste arisings
at the Eschborn site
from 2003 to 2008

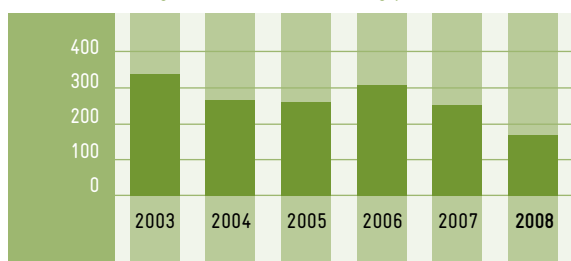
	2003	2004	2005	2006	2007	2008
Total waste arisings (t)	393.29	323.81	220.52	358.44	326.3	249.4
Wastes to recycling						
Total arisings (t)	306.7	233.5	157.4	254.6	264.7	174.6
Paper waste (t)	145.0	102.6	77.1	110.8	104.6	88.7
Electroscrap (t)	5.2	13.9	4.5	12.5	2.9	7.9
Hazardous wastes (t)	79.1	41.4	11.2	8.1	70.3	11.5
Wastes to final disposal						
Total arisings (t)	86.6	90.3	43.2	103.9	61.6	74.8
Wastes remaining for final disposal (t)	86.4	90.1	42.7	91.1	61.1	74.5
Hazardous wastes (t)	0.2	0.2	0.5	12.0	0.5	0.3
Total waste arisings (kg per staff member)	331.3	280.1	275.5	311.0	258.8	175.5
Total wastes to recycling (kg per staff member)	258.4	202.0	125.6	220.9	210.0	122.8
Paper (kg per staff member)	122.1	88.7	96.6	96.1	83.0	62.4
Total wastes to final disposal (kg per staff member)	73.0	78.1	53.3	90.1	48.8	52.6
Wastes remaining for final disposal	72.8	101.5	53.5	79.1	48.5	52.4
Recycled wastes as % of total	78.0	72.1	37.6	71.0	81.1	70.0

2001



GTZ publishes its first corporate environmental audit. The recommendations of the previous environmental audits are implemented, for instance in the energy sector. Improved heat recovery in the central EDP system and automatic standby for PCs reduce electricity consumption in the offices. Grid electricity and heat supplies are substituted in part by renewable energy produced by photovoltaic and solar thermal installations on GTZ's own buildings.

Total waste arisings at the Eschborn site (kg per staff member)



In auditing waste we have introduced a new calculation procedure which takes account of the LAGA PN 98³ guideline. The waste arisings for the preceding years were recalculated using this new procedure. This was necessary in order to convert volume statistics into weight statistics in a transparent and standardised way. As a result, the quantity of waste remaining for final disposal increased by 8% from the previous audit.

Outlook

The further fall in the total quantity of waste arisings shows that we are on the right path. The technical measures have been effective.

To reduce the quantity of waste remaining for final disposal in the offices, separation of waste must be improved. This will be achieved by making greater use of environmental communication. For example, new members of staff will receive environmental guidelines as part of the induction process. We would like to see the staff of the office cleaning company that we use receive training in this area. In future we shall draw attention to this point when issuing invitations to tender.

³ LAGA PN 98 is the guideline of the German Joint Working Group of the Länder on Waste (Bund/Länder-Arbeitsgemeinschaft Abfall) on procedures for chemical, physical and biological measurements in connection with the recycling and disposal of wastes. It also specifies the calculations and procedures to be used in, for example, converting volumes into units of weight that can then be compared.

Water

The challenge

Although water covers 70% of our planet, it is increasingly becoming a scarce resource. Only 3% of the enormous water quantities are potable fresh-water; of this, in turn, two thirds are stored in glaciers. Rivers and lakes only contain about 0.3% of the available water reserves.

Population growth and intensifying industrial and agricultural activities are responsible for the relentless increase in water consumption. Not only the scarcity of water resources as such is problematic, but also, and with increasing frequency, the poor quality of the resource.

Today some 1.3 billion people have insufficient or no access to clean potable water. In 2002 the participants at the UN World Summit on Sustainable Development in Johannesburg set themselves the

ambitious target of halving by 2015 the number of people lacking access to clean drinking water. Water has become one of the most valuable resources of our planet. The costs of treating water have risen steeply. This is not only a problem for the arid areas of the world: in Germany, too, water shortages can occur in some regions due to ever warmer summers.

Our targets

The target for 2009 is to reduce potable water consumption by 10% from its 2003 per capita level (7,849 l) to 7,064 l per staff member. GTZ's House 2 is particularly close to the Eschbach stream; the water is collected in a well in order to prevent the underground car park from flooding. This water is now used as a non-potable water resource and is no longer discharged to the sewers as it was previously. Our aim is to permanently reduce consumption of potable water by more than 50%.

2002



A green procurement strategy is adopted. From now on, environmental criteria play a role in addition to the classic criteria such as price, type and quality. Preference is given to recoverable and recyclable products. This reduces wastes and emissions and minimises resource consumption. Paper, energy and potable water consumption continue to drop, as do waste arisings and CO₂ emissions.

What we are doing

During the report year more efficient technologies were introduced that enable us to save potable water. The water system has been optimised through the use of more powerful pumps. The new units consume less energy and ensure a constant supply pressure. The frequency-regulated pumps enable water to be pumped from the well to the upper stories of our building. Increasing the pressure of the well-water system will in future enable all sanitary rooms to be supplied with water from that source.

Regulating the pressure of the well-water pump system is also extremely important for the air-conditioning system, since this also uses water from the well.

Potable water consumption at the Eschborn site
(l per staff member)



The results

At 32 litres per person per day, water consumption at GTZ is relatively low by comparison with other office-based businesses. Nevertheless, overall water consumption at the Eschborn site rose in the report year to 20,642 m³, representing an increase of 2,599 m³ on the previous year. Consumption of potable water rose in the report year to 11,255 m³. The quantity of potable water per staff member is therefore 1,755 m³, which is 28.5% higher than in the previous year. This higher consumption is due to the fact that the pump for the well-water system was modernised and had to be turned off while the work was carried out. For the same reason consumption of well water fell by 45% in 2008.

Outlook

Now that the technical systems have been modernised and are again in use, we expect that per-capita consumption of potable water will decrease considerably and that the quantity of well water used will increase.

We shall continue and intensify the measures initiated in previous years, including the acquisition of water-saving appliances and installations.

	2003	2004	2005	2006	2007	2008
Total water consumption (m ³)	9,317	12,772	12,661	10,639	18,043	20,642
Potable water consumption (m ³)	9,317	5,820	6,118	5,469	7,771	11,255
Non-potable water consumption (m ³)	not determined	6,952	6,543	5,170	10,272	9,387
Total water consumption (l per staff member)	7,849	11,048	15,866	13,332	14,313	14,524
Potable water consumption (l per staff member)	7,849	6,559	7,667	6,853	6,165	7,919
Potable water consumption (l per staff member and day)	31	26	31	27	25	33
Non-potable water consumption as % of total	not determined	54	52	49	57	45



Water consumption
at the Eschborn site
from 2003 to 2008

Energy

The challenge

Climate change, air pollution and the finiteness of non-renewable resources have for some years been key themes of international debate on the environment. Energy consumption and mobility, in particular, contribute substantially to climate change.

This means that businesses, too, need to be more aware of the ways they use energy and must manage energy responsibly. We aim to play a pioneering role here. In particular, the production of energy from fossil fuels such as gas, coal and mineral oil is a major source of CO₂ emissions. GTZ needs electricity for data processing, lighting, cooling and other processes such as cooking in the canteen or operation of the elevators. We give preference to electricity from renewable sources – the sun, wind and hydropower, as well as biomass – for these purposes. For heating we use fossil fuels, i.e. gas and oil⁴.

Our targets

The environmental affairs manager and the environmental steering group have formulated the following energy-related targets, with 2003 as baseline year.

Electricity consumption is to be cut by 15% to a level of 2,553 kWh per staff member by the year 2009. Over the same period, energy consumption for heating is to be cut by 30% to 4,757,300 kWh per annum.

What we are doing

In 2008 a number of measures were introduced to improve the energy efficiency of the existing energy systems. The mechanism controlling the external sunshading of the main administrative building was altered to enable better use to be made of sunlight in winter. The boilers in Houses 1, 2 and 4 were upgraded to take advantage of state-of-the-art technology.

Modern low-wattage compact fluorescent lamps replace traditional light bulbs. The voltage of the lighting system has been reduced from 240 to 220 volts. In addition the new lamps have been fitted with electronic ballast systems.

At an employee meeting 100 compact fluorescent lamps were distributed to members of staff to enable them to replace the old light bulbs in their desk lamps.



Energy consumption at the Eschborn site from 2003 to 2008

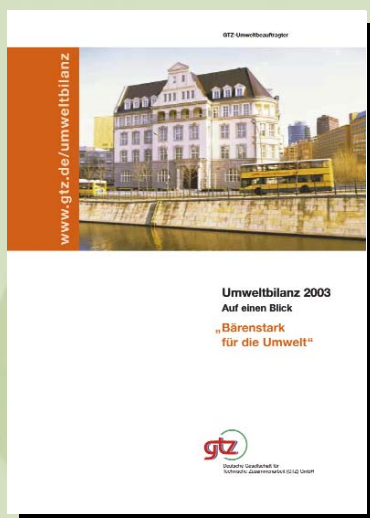
* GTZ's own photovoltaic facility is included in the figures from 2008 onwards.

** The energy consumption of the kindergarten is not taken into account in the calculation of building energy per staff member.

	2003	2004	2005	2006	2007	2008
Total useful energy consumption (kWh)	10,222,279	10,006,074	7,799,852	9,083,249	7,952,059	9,500,033*
Electricity consumption (kWh)	3,565,500	3,422,637	2,877,327	3,788,026	3,977,769	4,218,483*
Heating energy consumption (kWh) (excl. kindergarten)	6,656,779	6,583,437	4,922,525	5,295,223	3,974,290	5,281,550*
Kindergarten, total building energy (kWh)	139,346	173,739	137,481	146,880	137,284	142,548
Total useful energy consumption (kWh per staff member** and day)	34	35	27	32	25	27
Electricity consumption (kWh per staff member**)	3,004	2,961	2,506	3,287	3,155	2,968
Heating energy consumption (kWh per staff member** and year)	5,608	5,695	4,288	4,595	3,153	3,716
Heating energy consumption per unit net internal area (kWh/m ²)	196.4	213.2	167.6	174.0	98.4	116.8
Total primary energy consumption (kWh per staff member**)	9,281.0	9,369.4	7,338.9	8,463.9	7,537.4	7,968.8
Total primary energy consumption (GJ)	39.7	39.0	30.3	35.1	34.2	40.8

⁴ Heating oil is only used to heat House 5 (kindergarten).

2003



The Jobticket scheme is introduced – more than half of all staff at GTZ Head Office take up the offer to use clean modes of transport to get to work. At the Eschborn site, GTZ switches entirely to green electricity sources, and thus becomes one of the largest private-sector customers for this type of supply. Thanks to the switch, the company reduces its CO₂ emissions by some 2,200 tonnes annually.

The GTZ office in Berlin produces its first environmental audit.

Total useful energy consumption at the Eschborn site
(kWh per staff member and day)



The results

Per-capita electricity consumption has fallen by 187 kWh since last year and is now 2,968 kWh per person. However, because staff numbers have increased total electricity consumption in the report year is higher than in 2007 – it has risen from 3,977,769 kWh to 4,218,483 kWh (all figures exclude House 5).

The relatively cold winter of 2008 had a noticeable impact on the consumption of heating energy, which

rose from 3,153 kWh per staff member in 2007 to 3,716 in the report year. If one considers total heating energy consumption, the increase is even higher, amounting to more than one million kWh. In 2007 heating energy consumption totalled 3,974,290 kWh, while in the report year this had risen to 5,281,550. Without the steps we have taken to improve energy efficiency this increase would have been even greater.

Outlook

We intend to make systematic use of further opportunities for improving energy efficiency. To this end the lighting of the underground car park in House 2 is being fitted with motion sensors. Motion sensors are also being installed on a trial basis in the toilets in House 2. If the test proves successful, motion sensors will be fitted in all toilets.

The hot water heating system for the kitchen in House 1 is to be altered so that the waste heat from the cold stores can be used for this purpose.

CO₂ emissions and mobility

The challenge

Since the UN Intergovernmental Panel on Climate Change (IPCC) produced its Fourth Assessment Report in February 2007, climate change has become a hotter policy topic than ever before. It is now clear that anthropogenic emissions of CO₂ and other greenhouse gases are the key driver of global warming.

Global warming impacts already measurable today include the melting of glaciers, the thawing of permafrost soils, increasing aridification and desertification, sea-level rise due to melting polar ice, and an increase in extreme weather events such as flooding due to heavy rains and tropical cyclones. Species loss is also accelerating because animals, plants and ecosystems cannot adapt to the rapid changes.

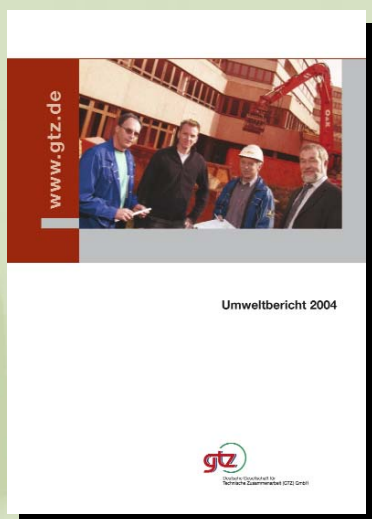
Regions in the southern hemisphere are particularly affected by climatic changes. It is here that most of GTZ's partner countries are located. The industrialised nations have a special responsibility to take action, as it is they who generate substantial CO₂ emissions through their economic activity, especially by burning fossil fuels.

Since 2003 GTZ has procured electricity for its Head Office exclusively from renewable resources. Hence its CO₂ emissions are generated mainly by official and staff journeys (mobility) and, in second place, by heating. As we are a company with worldwide operations, official travel by air makes a particularly large impact, followed by road and rail travel⁵.

What we are doing

In accordance with the recommendations made by its mobility working group established in 2006, GTZ has

2004



The guideline for conducting environmental audits in GTZ country offices is finalised. This allows systematic recording, assessment and reporting of the environmental impacts attributable to the offices. It also helps in identifying ways to reduce environmental impacts. GTZ's environmental audit is expanded for the first time to an environmental report. The environmental impact of projects performed by GTZ on behalf of the German Development Ministry BMZ becomes an aspect of the environmental report for the first time. A special environmental impact assessment procedure was already introduced in 1988 to ensure the ecological sustainability of GTZ's projects.

GTZ receives the 'Business on the Move' award of the Bundesverband Junger Unternehmer (BJU, the federation of young entrepreneurs) and the Auto Club Europa (ACE) for its sustainable local transport strategy.

⁵ GTZ's calculation of its CO₂ emissions inventory takes account of the 2.7 Radiative Forcing Index (RFI) of air travel – a factor reflecting the greater global warming impact of emissions from aircraft compared with ground-level emissions.

taken further action to foster the use of cycling and public transport in 2008. We took part for the sixth time in the 'Bike to Work' ('Mit dem Rad zur Arbeit') campaign initiated by the health insurer AOK. In the context of that campaign, we also collected additional data, for instance on the routes taken and the alternative means of transport used. The same number of staff participated in the campaign as in previous years. We continued the campaign in-house in autumn with prizes and award categories of our own.

The company has further expanded the services available to cyclists. For instance, since 2008 competent staff have been available to carry out cycle checks. Further measures have followed. As a result this report year saw GTZ become the first company in Hesse to be designated 'bicycle friendly' by ADFC, the German cyclists' association. Certification was based on an external inspection carried out by ADFC. The judges of the CSR Mobility Award were also impressed by GTZ's performance. In particular, the committee commented favourably on the fact that the number of business journeys made by car has been significantly reduced.

Since 2003 GTZ has offered its staff a 'Jobticket' with which they can use local public transport free

of charge from their place of residence to GTZ. Within the tariff zones through which they pass for that trip, they can also use the ticket in their leisure time. The Jobticket is financed by staff abstaining from taking two of the half-days off work to which they are entitled. 939 Jobtickets were issued in the report year. About 68% percent of the staff have thus taken up this offer.

We help staff who travel by car to set up lift-sharing schemes. Under the terms of its travel guidelines, GTZ only reimburses the value of a second-class rail ticket for travel costs within Germany. If official journeys are made by car, specific justification must be provided. This strategy is intended to prompt those undertaking such journeys to make increased use of rail transport within Germany. By using modern video-conferencing technology we reduce the number of flights taken. Within Germany we encourage the use of rail rather than air transport. To encourage as many people as possible to change their habits, we provide staff with information on the advantages of rail travel.

GTZ aims to become a climate-neutral company. To that end, we have developed an offset project together with a partner in Thailand: the methane

	2003	2004	2005	2006	2007	2008
Official journeys within Germany						
Air (km)	1,651,526	1,466,360	1,427,065	1,512,112	2,686,828	1,203,810
Rail* (km)	1,563,613	1,681,043	2,053,812	2,259,505	2,499,490	2,632,930
Road (km)	90,722	95,200	92,555	103,364	86,702	80,320
Official journeys abroad by GTZ Head Office staff						
Air (km)						35,717,400
Official journeys abroad by all GTZ staff						
Air, all GTZ staff (km)	54,864,720	46,662,240	46,522,260	53,821,817	74,571,862	75,796,128
Official journeys within Germany – shares of modes						
Air (%)	50.0	45.2	39.9	39.0	51.0	30.7
Rail (%)	47.3	51.8	57.5	58.3	47.4	67.2
Car (%)	2.7	2.9	2.6	2.7	1.6	2.1



Official journeys
from 2003 to 2008

* The figures for rail take account of all GTZ staff across Germany.

CO₂ emissions
from 2003 to 2008
by source

	2003	2004	2005	2006	2007	2008*
Total CO ₂ emissions (t CO ₂)	17,160	11,121	10,858	13,714	14,585	15,194
Total transport (t CO ₂)	14,579	9,313	9,606	12,329	13,512	13,794
Air (t CO ₂)	11,270	7,559	7,405	10,398	11,391	11,662
Rail (t CO ₂)	70	111	136	149	165	114
Road (t CO ₂)	29	23	22	24	19	21
Commuting (t CO ₂)	2,481	1,143	1,727	1,420	1,565	1,581
Weekend commuters (t CO ₂)	729	477	316	338	372	416
Energy consumption** (t CO ₂)	2,581	1,808	1,252	1,385	1,073	1,400
Total CO ₂ emissions (t CO ₂ per staff member)	14.8	9.8	9.7	11.4	11.9	11.0
Total transport (t CO ₂ per staff member)	12.6	8.3	8.6	11.7	11.0	10.0

* The CO₂ emissions of air travel include all official journeys by staff from the Eschborn site. The figures for rail travel include all GTZ staff across Germany. The CO₂ emissions of air travel were calculated according to the atmosfair method, while for rail travel Deutsche Bahn (German Rail) provided a precise calculation.

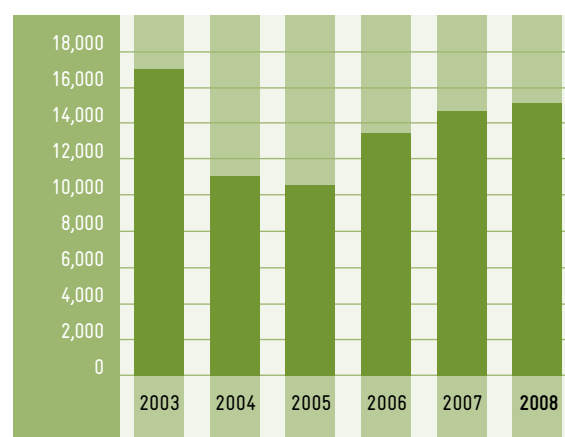
** The building energy consumption of the kindergarten is taken into account in the calculation of CO₂ emissions.

gases arising from the effluent treatment of a palm oil firm are captured and utilised. Certification as a CDM Gold Standard project⁶ is envisaged in 2009.

The results

In 2008 the total number of kilometres travelled on official journeys, both within Germany and abroad, rose only slightly. Changes in the choice of transport mode are also encouraging: while in 2007 travel shifted from rail to air, in this report year 67.2% of official journeys were made by rail, demonstrating that significantly more members of staff are choosing to travel by train. The number of internal flights is down by 20.3% on the preceding year. The development of total kilometres travelled is reflected in the CO₂ emissions inventory. The rise in absolute terms over the previous year amounts to only 282 tonnes CO₂ for transport. With the contribution of

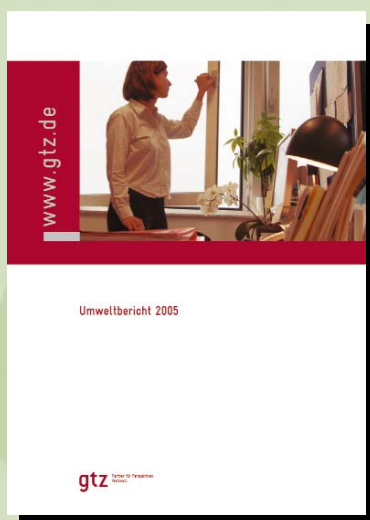
11,700 tonnes of CO₂, air travel continues to account for the largest share of CO₂ emissions. The rise in the number of staff at GTZ and their environmentally aware mobility behaviour is reflected in the per-capita CO₂ emissions, which fell by 850 kg per member of staff from the previous year.

Total CO₂ emissions at the Eschborn site (t)

⁶ The Clean Development Mechanism (CDM) – A development cooperation tool for climate change mitigation

The Clean Development Mechanism is an approach designed to reduce global greenhouse gas emissions. Developing countries often lack the technology and financial resources needed to construct environmentally sound facilities or retrofit old ones in order to reduce greenhouse gas emissions. This is where the Clean Development Mechanism comes in: it allows industrialised and developing countries to carry out climate change mitigation projects jointly in the developing world. The industrialised countries can offset the greenhouse gas savings against their domestic reduction commitments, or can trade the emission certificates. The developing countries receive climate-smart technology and additional financial resources through the mechanism.

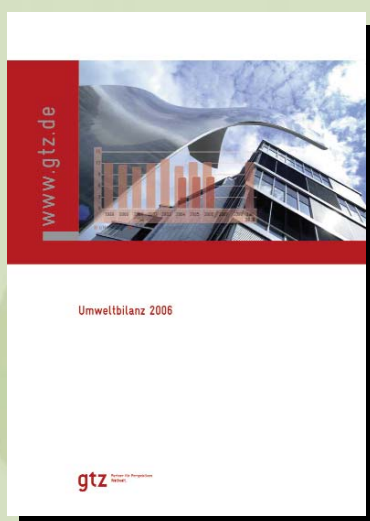
2005



More than 99 per cent of the paper used at GTZ Head Office is of the recycled type. The remaining proportion of primary fibre paper is made up of special papers that cannot be substituted. Total paper consumption has dropped from the previous year and is now just under 11.5 million sheets. The production of this quantity of paper involves consumption of 372 kilograms of wood, 63,900 kilograms of waste paper, 886,000 litres of water and 157,000 kilowatt-hours of energy. If we had not used recycled paper, the numbers would have been in excess of

170,000 kilograms of wood, 3 million litres of water and 600,000 kilowatt-hours of energy.

2006



The environmental refurbishment of House 1 is completed. It now operates to low-energy house standards. Energy-efficient heating/cooling panels in the ceilings of the office rooms deliver energy savings, as do insulated windows and external walls. A system that recovers heat from the exhaust air generates savings in heat and cold production, while the closed-loop sanitation system in the central part of the building reduces water consumption. Furthermore, the interior fittings largely meet high environmental standards; the wood used, for instance,

is sourced from sustainable forest management and bears the FSC label⁷.

⁷ FSC stands for Forest Stewardship Council. Only wood that came from sustainably managed forests and was verifiably produced in line with social, economic and environmental principles receives this label.

Environmental audits of the field structure in brief

Paraguay

For its environmental audit the GTZ Office in Paraguay analysed the areas of energy, waste, transport, office materials, cleanliness, security and water. Local staff report a range of positive developments and results. For example, they now take care not to print or photocopy unnecessarily. However, a duplex printing function would enable even greater savings to be achieved. This and other suggestions for increasing environmental performance yet further were an important outcome of the environmental audit.

Dominican Republic

The key objective of the environmental audit in the Dominican Republic was to systematically record all input and output flows of materials, substances, energy, products and emissions, thereby enabling staff to identify opportunities for reducing environmental impacts, cutting costs and improving working conditions. At the same time the exercise demonstrates to local businesses how everyone can play a part in protecting the environment. The environmental audit of the GTZ Office in the Dominican Republic resulted in a comprehensive action plan for saving energy, reducing water consumption and preventing waste.



Pakistan

In 2008 environmental audits were produced both by the GTZ Office and the office of the Renewable Energy and Energy Efficiency (REEE) programme. The audits showed that both offices were particularly good at energy saving. Hot water is provided by solar systems, inefficient light bulbs are a thing of the past, air conditioning is used intelligently and heat-reflecting paint has been applied to the buildings. All in all these energy-saving measures mean that energy consumption per person per year is very low – 2,111 kWh in the GTZ Office and only 686 in the REEE office. That is only one fifth of per-capita consumption at Head Office in Eschborn. Staff at both offices are also very economical with paper, with the REEE office using 1,450 sheets per person per year and the GTZ Office 2,500. In recent years drivers have been trained in fuel-saving driving techniques. In the report year local staff have discussed environmental measures with great commitment and by putting forward useful suggestions they have played an active part in improving environmental management.

Despite the successes already recorded, staff are hoping to cut resource use by a further five to ten per cent. Proposals being considered include installing motion sensors, using air conditioning even more efficiently, using bicycles instead of cars for short journeys and printing paper on both sides.



Thailand

The environmental audit was conducted from January to December 2008. It showed that since 2005 daily paper consumption had been reduced from 63 to 52 sheets per person. Although there is no official recycling system in Thailand, the caretaker of the building in which GTZ has its offices ensures that waste is separated by type; paper, plastic bottles and cans are sorted and then recycled by refuse collectors. Since the last environmental audit in 2005 water consumption per member of staff has fallen somewhat, but at 84.89 litres per day it remains very high. Further improvements are needed in this area. Energy consumption per person per day has risen slightly since the last audit, amounting in this analysis period to 17.38 kWh. The rise is mainly due to the air-conditioning system; this is the only means by which the rooms can be ventilated, since it is not possible to open any of the windows in the high office building.

Tunisia

In 2008 Tunisia set out to extend the scope of its environmental audit. Whereas the two preceding annual audits had covered only the GTZ Office in Tunis, the current audit includes all the organisation's project and programme offices in the public-benefit sector. Collecting the data presented a considerable challenge. The offices of almost all of the projects and programmes are located within the respective partner organisations. In such cases data on matters such as water and energy consumption is usually collected only for the office complex as a whole. Data for individual offices is unavailable and can only be estimated. We therefore decided that, while collecting the relevant data wherever possible, we would concentrate on identifying and implementing concrete measures and documenting their success.

In this report year the focus was on energy efficiency. The aim was to make energy saving in the project offices a high-profile issue. Measuring the energy requirements of selected devices rendered energy consumption transparent. Suggestions for improvement were put forward and prioritised and an action plan was drawn up. Success is already reflected in the 2008 environmental audit: since the previous year water consumption has dropped by 8%, electricity consumption by 6% and CO₂ emissions by 43%. The environmental audit of 2009 will focus on the sustainability of the measures that have been introduced. After completion of this year's audit the equipment used to take energy readings was made available for members of staff to borrow so that they could identify energy-guzzling appliances at home.



Extending the scope of the audit to projects and programmes provides an opportunity to get our partners more closely involved. It demonstrates to our partners – the Ministry for the Environment and Sustainable Development and the Ministry for Industry, Energy and SMEs – that we are committed to sustainability in our own offices as well as further afield. Our aim is not only to explain our actions to them, but also to discuss the structural shortcomings that hinder the environmental auditing process and make it difficult to identify and implement points for action.

Syria

In 2008 the GTZ Office in Syria carried out its first analysis of the environmental situation and drew up an environmental audit. Staff identified the greatest potential for action as being in connection with waste. As in many other partner countries, there are no municipal systems for collecting waste for recycling in Syria. This has spurred on GTZ staff to develop their own recycling strategy. They researched opportunities for supplying waste paper to recycling businesses and now collect office paper separately from other waste. Hazardous waste is also collected separately and no longer included in the general waste. Rechargeable batteries replace single-use ones wherever possible, and used batteries of all types are collected separately. Used toner cartridges for printers and photocopiers are sent to businesses that refill them.





Namibia

The Office in Windhoek is already very eco-friendly; many of the staff demonstrate environmental awareness in their actions. That is one of the conclusions of the environmental audit carried out there. For example, almost all light bulbs are of the energy-saving type, and in the report year the old hot-water cylinder was replaced by a new, energy-efficient boiler. Because recycled paper is not commercially available in Namibia, the Office is now in contact with NGOs that are able to provide it. Since October 2008 the Office in Namibia has separated paper from other waste. To reduce the CO₂ emissions arising from business travel, many members of staff travel to the Office in shared taxis.

Mozambique

Between January 2007 and July 2008 all the GTZ offices in Mozambique underwent an environmental audit. Fourteen offices were therefore involved – the country office in Maputo, seven other offices in the Mozambique capital and six in the provinces of Sofala and Manica.

Each office nominated an environmental affairs manager who is responsible both for preparing the audit and for ensuring that the process continues after the audit has been completed. All the environmental affairs managers took part in a workshop at which a comprehensive action plan was drawn up. This jointly developed plan was adopted by each of the offices and adapted to prevailing local conditions.

Key points of the action plan included the long-term tracking of energy, water and paper use and the introduction of environmentally friendly products, such as certified recycled paper. Energy and water consumption was reduced, as was the quantity of waste. In general terms this action plan increased the level of environmental awareness among GTZ staff.

The environmental audit in Mozambique has highlighted GTZ's position on environmental issues. Staff have learned that improving environmental conditions in the offices is a continuous process that is not only good for the environment but also economically and socially beneficial.

GTZ has adopted the auditing principles published by the Association for Environmental Management in Banks, Savings Banks, and Insurance Companies (VfU) as its standard for in-house environmental audits at the Eschborn and Berlin locations. We depart from these principles by using the more exact emission factors published by the German Federal Environment Agency (UBA) to calculate energy- and transport-related emissions. To calculate the emissions of air travel, we have used the emissions calculator provided by atmosfair (www.atmosfair.de) as recommended by UBA.

Operations in Eschborn

2008 system boundaries

The figures give the aggregate number of full-time posts expressed as weighted numbers of staff. The number of people actually working at Head Office is higher, as GTZ, as a family-friendly company, offers its employees a broad array of worktime schemes, including various part-time options such as half posts.

The numbers include all Head Office employees and project personnel working at Head Office, as well as trainees. We have included interns since 2006; however, their number is only taken into account when calculating travel data.

It is assumed that the absence times of Head Office employees on official journeys balance the attendance times of interns and consultants at Head Office. Interns and consultants are therefore not taken into account in the audit inventory.

External personnel are canteen and security personnel who use space in the buildings and, through their presence and activities, are taken into account for the consumption and waste figures.

2007 was the first year for three years in which GTZ again used House 1 for the entire year. As a result, the floor area reference figure is different from the three previous years. House 5 is not taken into account when calculating per-capita consumption values, as the children are not counted as staff. Working days per year: 250.

Characterisation of system boundaries

The 10th environmental audit of GTZ covers the Eschborn location with the above staff and buildings and the installations listed below.

System boundaries

- EDP centre: included
- Canteen: included
- Canteen personnel: partly included
- Guards: partly included
- Well water installation: included
- Photovoltaic installation: included
- Solar thermal installation: included
- Official journeys: These data include trips booked for GTZ by the HRG travel agency. They include: Head Office employees, field-staff members, GTZ International Services and consultants/appraisers. The calculation of CO₂ emissions is based exclusively on data for Head Office staff employed in Eschborn.



Audit
reference:
Staff

	2003	2004	2005	2006	2007	2008
Number of staff excluding external personnel	1,156	1,128	1,122	1,121	1,229.5	1,380.2
Number of staff including external personnel	1,187	1,156	1,148	1,153	1,260.5	1,421.2
Number of staff including external personnel and interns				1,231	1,352.5	1,518.2

Building services systems – Replacements and improvements

- Replacement of heating boilers in House 4 and House 2, with conversion to condensing boiler technology and frequency-controlled pumps.
- Replacement of the condensing boiler in House 1 from the stock.
- Replacement of cooling systems in House 2; these now operate by means of indirect free cooling.
- Adjustment of ventilation systems in House 2, with a reduction of air volume by means of frequency converters.
- Upgrading of the pressure boosting system for well water in House 2 with frequency-controlled pumps.
- Only highly efficient lamps are used (formerly 58 and 36 watts, now 51 and 32 watts). Moreover, all new luminaires have electronic ballasts.
- Reduction of supply voltage in House 1 from 240 to 220 volts.
- Refinement of the controls of exterior sunshading on House 1 in order to make better use of solar energy in winter.

Of the replacements and improvements planned for 2009, the following have already been executed:

- Recovery of waste heat from cold stores and its use to produce hot water in the kitchen of House 1.
- Conversion of the adiabatic cooling system⁸ in House 1 to circulating well water.
- Installation of motion detectors in the garages and WCs of House 2 to control lighting.

Of the replacements and improvements planned for 2009, the following are still to be executed:

- Thermal insulation of the flat roof of House 2 to the standards applying to new buildings under the applicable German statutory ordinance.
- Removal of the asbestos-cement lining around the roof parapet.
- Replacement of the ventilation systems on the roof of House 2 with units delivering the maximum possible heat-cold recovery of 96 per cent; these have particularly electricity-efficient ventilators and drives. Installation of an adiabatic cooling system, making it possible to cool corridors, special rooms, conference rooms and other air-conditioned areas in summer without any mechanical chilling devices.
- Installation of a combined solar thermal system supported by a water heat pump (extracting heat from the well water) for hot water production in House 2.

Analyses are currently under way on further ways of using the well water and on the fitting of thermal insulation foils on the windows of House 2.

⁸ Adiabatic (or evaporative) cooling achieves the cooling potential by evaporating water over large surface areas in the extract air duct. If, for instance, the outdoor temperature is 32 degrees and the extract air temperature is 26 degrees, evaporation cools the extract air to 20 degrees. This cold is then transported via the heat recovery system to the fresh air duct, where it cools the incoming air from 32 to 22 degrees. In this manner, one cubic metre of water can cool 1,000 square metres of office space. This process is thus considered a form of renewable energy.

Building	Gross area m ²	Net internal area (offices) m ²
House 1 (after refurbishment)	18,800	16,240
House 2	14,500	12,005
House 3	16,000	10,880
House 4	1,650	1,250
House 5	445	400
Total	51,395	40,375*

* Total excluding House 5, as this contains no net internal office area.



Audit
reference:
Buildings

2008 list of indicators for operations in Eschborn

Indicator	Quantity	Reference / boundary
Facilities		
Net internal area	45,215 m ²	Only office space is included in net internal area
Net internal area per staff member	32.76 m ²	Houses 1–4, House 5 is kindergarten
Consumables		
Paper consumption	10,492,757 A4 sheets	Excl. documentation and publications
Total paper consumption per staff member and year	7,602 A4 sheets	Excl. external personnel and interns, excl. documentation and publications
Printout consumption per staff member and year	5,699 A4 sheets	Excl. external personnel and interns, excl. documentation and publications
Photocopy consumption per staff member and year	1,903 A4 sheets	Excl. external personnel and interns, excl. documentation and publications
Recycled paper as % of total	98.1%	Proportion of recycled paper in overall consumption
Number of hazardous substances	not determined	Incl. building cleaning
Energy		
Total energy consumption	9,500,033 kWh	Electricity, oil, gas
Photovoltaics	8,900 kWh	
Electricity consumption	4,209,583 kWh	Excl. House 5
Electricity consumption per staff member	2,968 kWh	All staff members on site, incl. external personnel but excl. interns, incl. photovoltaics
Electricity consumption per unit net internal area per year	93.30 kWh/m ²	On net internal area see above, incl. photovoltaics
Heating energy consumption	5,281,550 kWh	Excl. House 5
Heating energy consumption per unit net internal area	116.81 kWh/m ²	On net internal area see above
Heating energy consumption per staff member per year	3,716 kWh	Incl. external personnel, excl. interns
Water and wastewater		
Potable water consumption, total	11,255 m ³	Houses 1–5
Non-potable water consumption, total	9,387 m ³	From well water installation
Potable water consumption per staff member per year	7,919 l	All staff members on site, incl. external personnel, excl. interns
Potable water consumption per staff member per day	31.7 l	250 working days
Total water consumption per staff member per year	14,524 l	All staff members on site, incl. external personnel, excl. interns
Total water consumption per staff member per day	58.1 l	250 working days
Contribution of non-potable water to total consumption	45%	

Indicator	Quantity	Reference / boundary
Solid waste		
Total waste arisings	249.4 t	Incl. paper
Total waste arisings per staff member and year	175.5 kg	All staff members on site, incl. external personnel, excl. interns
Paper waste	88.7 t	All staff members on site, incl. external personnel, excl. interns
Paper waste per staff member	62.4 kg	All staff members on site, incl. external personnel, excl. interns
Wastes remaining for final disposal	74.5 t	Without hazardous wastes
Wastes remaining for final disposal per staff member per year	52.6 kg	All staff members on site, incl. external personnel, excl. interns
Recovery ratio	70%	Proportion of total waste arisings
Transport		
Proportion of commuters using local public transport	27%	According to 2005 mobility survey, adjusted in 2008
Jobticket	939 tickets	Number of Jobtickets issued
Official journeys within Germany*	3,917,060 km	
Official journeys within Germany, km per staff member	2,756 km	Excl. external personnel and interns
Proportion of rail km (within Germany)	67.2%	Proportion of total official journeys within Germany
Proportion of air km (within Germany)	30.7%	Proportion of total official journeys within Germany
Proportion of company car km (within Germany)	2.1%	Proportion of total official journeys within Germany
Official journeys abroad by all GTZ staff	75,796,128 km	Only flights booked in Eschborn
Official journeys abroad by Eschborn staff	35,717,400 km	Only flights booked by Eschborn staff
Emissions		
CO ₂ emissions, energy	1,400 t	Emission factors according to UBA (2004)
CO ₂ emissions, commuting	1,581 t	Emission factors according to UBA (2004)
CO ₂ emissions, weekend commuters	416 t	Emission factors according to UBA (2004)
CO ₂ emissions, official journeys	11,797 t	Emissions factors according to atmosfair (2006–2009)
CO ₂ emissions, total	15,194 t	

* Rail – all Head Office employees

Input/output analysis for 2008 Operations in Eschborn

Account	Unit	Input	Stock	Unit	Output
1. Land and property					
1.1 Buildings	qty.		5		
1.2 Land area	m ²		34,703	m ²	
■ built-up	m ²		13,913	m ²	
■ landscaped	m ²		9,985	m ²	
■ sealed	m ²		10,805	m ²	
1.3 Floor areas					
■ net internal area	m ²	4,840	45,215	m ²	
■ total floor area	m ²		n.d.	m ²	
■ enclosed volume	m ³		n.d.	m ³	
2. Systems & facilities					
2.1 Building services systems					
■ well system	qty.		1	qty.	
■ heat recovery systems	qty.			qty.	
- water			1		
- air			8		
■ PV	qty.		1	qty.	
■ solar thermal	qty.		1	qty.	
■ sculleries	qty.	1	2	qty.	1
■ grease traps	qty.	1	2	qty.	1
■ petrol traps	qty.	2	3	qty.	
■ transformers	qty.		8	qty.	
■ low-voltage switchgear	qty.		4	qty.	
■ medium-voltage switchgear	qty.		4	qty.	
■ lifts	qty.		24	qty.	
■ emergency power supply	qty.		4	qty.	
■ ventilation systems	qty.	15	64	qty.	
■ heating systems	qty.		5	qty.	
■ sprinkler systems	qty.		3	qty.	
■ uninterruptible power supply units	qty.	2	10	qty.	
■ fire alarm systems	qty.		4	qty.	

Account	Unit	Input	Stock	Unit	Output
2.1 Building services systems					
■ wall hydrants	qty.			qty.	
– wet			55		
– dry			8		
■ smoke extracts	qty.		13	qty.	
■ water treatment units	qty.		5	qty.	
■ water lifting units	qty.		6	qty.	
■ pressure boosting systems	qty.		4	qty.	
■ gas control stations	qty.	2	4	qty.	
■ fire dampers	qty.		350	qty.	
■ indirect free cooling	qty.	2	2	qty.	
■ evaporative chillers	qty.	2	2	qty.	
■ safety lighting unit	qty.	1	1	qty.	
■ gas extinguisher system	qty.	1	1	qty.	
■ electro-acoustic systems	qty.	7	7	qty.	
■ frequency converters	qty.	4	4	qty.	
■ CO warning systems	qty.	3	3	qty.	
2.2 Central EDP	qty.	39	178	qty.	14
2.3 Distributed EDP					
■ PCs incl. laptops	qty.	222	1,860	qty.	455
■ printers	qty.	5	1,000	qty.	57
2.4 Photocopiers					
■ GTZ-owned	qty.			qty.	
■ rented	qty.		65	qty.	
2.5 Office equipment	qty.	--	--	qty.	n.d.
2.6 Communications equipment	qty.		33	qty.	5
2.7 Kitchen equipment					
■ refrigeration, freezing	qty.		7	qty.	
■ canteen dishwashing system	qty.	4	56	qty.	
■ dishwashers in kitchens on each floor	qty.	n.d.	52	qty.	
■ refrigerators	qty.	n.d.	52	qty.	

Account	Unit	Input	Stock	Account	Unit	Output
2.8 Electronic household equipment						
■ washing machines	qty.		1		qty.	
■ condensing driers	qty.		1		qty.	
■ dishwashers	qty.		3		qty.	
2.9 Motor vehicles						
■ utility vehicles	qty.		1		qty.	
■ company cars	qty.	3	4		qty.	3
3. Consumables						
3.1 Paper (excl. photocopies, documentation and publications)	sheet	7,866,115			sheet	
3.2 Photocopies	sheet	2,626,642			sheet	
3.3 Hazardous substances	qty.	7			qty.	
4. Incoming post and goods				4. Outgoing post and goods		
4.1 Incoming post	kg	16,880		4.1 Outgoing post	kg	75,910
4.2 Incoming goods	kg	276,700		4.2 Outgoing goods	kg	9,221
5. Energy				5. Emissions (energy)		
5.1 Heating energy	kWh	5,281,550		5.1 Heating energy	t CO ₂	1,338
5.2 Electricity, total	kWh	4,223,470 ⁹		5.2 Electricity	t CO ₂	62
of this, conventional sources	kWh	645,775 ¹⁰				
of this, photovoltaics	kWh	4,987				
6. Town mains water				6. Wastewater		
6.1 Potable water	m ³	11,255		6. Wastewater, total	m ³	20,642
6.2 Well water, recirculated	m ³	9,387				

⁹ Incl. House 5 (kindergarten)

¹⁰ Houses 4 and 5

Account	Unit	Input	Stock	Account	Unit	Output
7. Solid waste						
				7.1 Paper	t	
				7.1.1 Mixed paper for recovery	t	76.66
				7.1.2 File material for recovery	t	12
				7.2.1 "Green Dot" labelled wastes	t	n.d.
				7.2.2 Commercial wastes handled as municipal solid waste	t	74.48
				7.2.3 Green waste	t	n.d.
				7.2.4 Kitchen and canteen waste	t	9.50
				7.2.5 Electroscrap	t	7.87
				7.2.6 Glass waste	t	n.d.
				7.3 Hazardous waste, recovered	t	11.50
				7.4 Hazardous waste, to final disposal	t	0.33
8. Transport						
8.1 Commuter travel						
8.1.1 Local public transport	km	3,130,502		8.1.1 Local public transport	t CO ₂	232
8.1.2 Motor vehicles	km	9,025,947		8.1.2 Motor vehicles	t CO ₂	1,350
8.1.3 Cyclists	km	313,124		8.1.3 Cyclists	t CO ₂	-
8.1.4 Pedestrians	km	29,544		8.1.4 Pedestrians	t CO ₂	-
8.2 Weekend commuting						
8.2.1 Rail	km	2,955,181		8.2.1 Rail	t CO ₂	195
8.2.2 Motor vehicles	km	1,477,591		8.2.2 Motor vehicles	t CO ₂	221
8.3 Official journeys within Germany						
8.3.1 Road	km	80,320		8.3.1 Road	t CO ₂	20
8.3.2 Rail	km	2,632,930		8.3.2 Rail	t CO ₂	114
8.3.3 Air	km	1,203,810		8.3.3 Air	t CO ₂	214
8.4 Official journeys abroad						
8.4.1 Air	km	35,717,400		8.4.1 Air travel abroad by Eschborn staff	t CO ₂	11,449

Operations in Berlin

Since 2008, GTZ has operated at two locations in Berlin: the GTZ-Haus on the Reichpietschufer, and rented office rooms on the Potsdamer Platz. Although the activities of GTZ's environmental team in Berlin now encompass both locations, the following data relate exclusively to GTZ-Haus Berlin. Environmental reporting will integrate data from both locations from 2009 onwards.

In the report period, an average of 70 staff members worked in GTZ-Haus Berlin. Events drew a further 15,000 guests to the building. Due to building work on the 4th and 5th floor, numerous building workers were also in the building. The data collected are thus subject to one-off effects.

Information and communication

The bulletin titled 'DER GRÜNE PUNKT', which is issued to explore special themes, was published once in 2008. Its theme was the 'Flipping the switch' campaign – all offices in GTZ-Haus Berlin have been fitted with switched plug-and-socket boards. This helps to put an end to energy wasted by no-load current. In order to remind colleagues to indeed switch off the plug-and-socket boards at the end of their working day, the environmental team distributed doorknob tags.

Mobility

A mobility survey among all GTZ staff produced a welcome outcome: it was found that 62 per cent of staff come to work by bus and rail, and 35 per cent cycle. Only a very small proportion comes by car. The daily transport volume generated by the journeys to work of all GTZ staff in Berlin totals 1,172 kilometres by bus and rail, 454 emissions-free cycling kilometres and only 133 kilometres travelled by car. The annual carbon dioxide emissions attributable to travel to work thus total 28.5 tonnes.

Fair trade and procurement

The coffee, tea and juices available to staff and visitors of GTZ-Haus Berlin are all sourced from organic farming and fair trade. The flowers used for decoration also come from fair trade sources.

These 'organic' standards apply equally to event catering. Caterers are requested to use fair trade and organic produce, as well as regionally produced foods. GTZ-Haus Berlin not only contributes in this way to sustainable development, but also and above all raises the profile of GTZ as a company committed to sustainability.

The detailed records kept of the office materials consumed in GTZ-Haus Berlin result in these being used economically. Procurement is largely via Head Office, which ensures that the standards applied there are also observed in Berlin.

Paper and waste

Total waste arisings dropped by more than one-third in 2008. This is due exclusively to the circumstance that large amounts of bulky waste were removed in the previous year when the upper floors were cleared out and that construction wastes arising in 2008 were partly disposed of directly by the builders.

2007



Heating energy consumption at Head Office in Eschborn has dropped by 39.7 per cent from the 2003 baseline to 4.1 million kilowatt-hours. This makes a major contribution to greenhouse gas emissions abatement. On the other hand, electricity consumption has risen by five per cent from 2003 to four million kilowatt-hours – reducing this remains a challenge. GTZ's projects further contribute to climate change mitigation. For instance, activities promoting wind energy in twelve countries have helped to realise 20 wind farms. GTZ is assisting countries such

as Tunisia in their efforts to implement the United Nations Framework Convention on Climate Change. GTZ's Proklima project fosters worldwide protection of the ozone layer.

In India, GTZ presents the first integrated environmental audit of all activities in a country. Environmental affairs managers responsible for implementing relevant measures have been appointed for all programmes and in all offices.

Water and energy

Total energy consumption rose slightly by two per cent in 2008 from the previous year. This is due partly to the colder winter, and in part also to a faulty heating boiler. Electricity consumption dropped by six per cent from the previous year – since 2006 green electricity is used for the entire GTZ-Haus building. This reduction is due not least to the introduction throughout the building of switched plug-and-socket boards.

Water consumption has risen by 14 per cent, which is due to the building work. At 970 cubic metres, the recorded value is the highest since environmental reporting began in Berlin in 2004. Water consumption will need to be monitored closely in the coming years.

Operations in Berlin

2008 system boundaries

In 2008, 70 staff members worked in GTZ-Haus Berlin. Consultants and employees working elsewhere in Berlin are not taken into account.

GTZ-Haus Berlin had the same net internal area in 2008 as it did in previous years: 2,073 square metres (incl. net area of the ground floor atrium and the 5th floor). Working days per year: 250.

Characterisation of system boundary:

The 6th environmental audit carried out by GTZ at its Berlin site covers GTZ-Haus on the Reichpietschufer, with the number of staff set out above. The further GTZ location on the Potsdamer Platz is not yet integrated into the environmental audit.

2008 list of indicators for operations in Berlin

Indicator	Quantity	Reference / boundary
Facilities		
Net internal area per staff member (total staff: 70)	30 m ²	GTZ-Haus Berlin
Consumables		
Paper consumption	n.d. sheets	Excl. sanitary paper
Paper consumption per staff member	n.d. sheets	Excl. sanitary paper
Photocopies per staff member and year	n.d. number	All staff members on site
Recycled paper as % of total	100%	Proportion of recycled paper in overall consumption
Number of hazardous substances	n.d.	Incl. building cleaning
Energy		
Total energy consumption	672,605 kWh	Electricity, gas
Total energy consumption per staff member	9,609 kWh	All staff members on site
Electricity consumption	251,412 kWh	
Electricity consumption per staff member	3,592 kWh	All staff members on site
Electricity consumption per unit net internal area	121 kWh/m ²	GTZ-Haus Berlin
Heating energy consumption	421,193 kWh	Gas
Heating energy consumption per staff member	6,017 kWh	All staff members on site
Heating energy consumption per unit net internal area	203 kWh/m ²	GTZ-Haus Berlin
Water and wastewater		
Water consumption, total	970 m ³	Town mains water & sprinkler system
Water consumption per staff member	13,857 l	All staff members on site
Water consumption per staff member per day	55.4 l	250 working days
Solid waste		
Total waste arisings	102,680 l	Incl. paper and glass
Total waste arisings per staff member	1,466 l	All staff members on site
Paper waste	n.d. l	Cannot be determined precisely, as mixed with collected bulky waste

Indicator	Quantity	Reference / boundary
Solid waste		
Paper waste per staff member	n.d. l	All staff members on site
Paper and bulky waste	47,000 l	Cannot be determined precisely, as mixed with collected paper waste
Glass waste	5,760 l	Two 240 l bins x 12 (collected every 4 weeks)
Glass waste per staff member	82 l	
Packagings	12,480 l	Two 240 l bins x 26 (collected every 2 weeks)
Packagings per staff member	178 l	All staff members on site
Wastes remaining for final disposal	37,440 l	Solid municipal waste
Wastes remaining for final disposal per staff member	535 l	All staff members on site
Recovery ratio	n.d. %	Proportion of total waste arisings
Transport		
Proportion of commuters using local public transport	62%	According to staff survey
Emissions		
CO ₂ emissions, energy	90.98 t	Only gas (electricity CO ₂ -free as green electricity)
CO ₂ emissions, commuting	28.74 t	According to staff survey
CO ₂ emissions, total	119.72 t	Excl. official journeys

n.d. = not determined

AgenZ

We take the environmental targets adopted by GTZ as the guideline for our activities. This work focuses on information and communication, paper and waste, energy and climate, mobility and procurement. AgenZ established its own environmental team in 2008.

Information and communication

Inspired by the 'DER GRÜNE PUNKT' bulletin produced by GTZ in Berlin, we have introduced our 'Grüner Tipp' (green tip) scheme. This has been made a regular item on the agenda of our weekly team meeting. We use this to inform about new developments, give tips on all environmental issues and stimulate staff to join in.

Paper and waste

In 2008, AgenZ consumed more than 170,000 sheets of paper, which translates into 32 sheets per person and day. This relatively high consumption is due to the regular production of concept papers and marketing material, and the numerous events which we organise. We expect to be able to reduce our paper consumption substantially for 2009 by switching to duplex printers and copiers and through active efforts made by all members of staff.

Energy and climate

To improve our energy balance, we are concentrating particularly on technical innovations such as replacing lamps, isolating electric circuits, reducing IT energy consumption and switching heating systems to automatic operation. We expect this to deliver major savings in 2009.

Mobility

In 2008, 65 per cent of staff in Rödelheim used their own car to come to work, while 35 per cent used public transport and cycling. A team of four took part in the 'Bike to Work' initiative of GTZ.

Procurement

Coffee and tea for staff and guests are sourced preferentially from organic production. Juices and mineral water are regional products.

Outlook

To achieve our environmental targets, we rely mainly on implementing smart technologies and cooperating closely with GTZ Head Office. Moreover, we will continue to raise awareness among our colleagues of the added value generated by these innovations and will urge them to join in.

2008



GTZ is the first company in Hesse to become a certified 'bicycle-friendly company'. This was preceded by an external audit conducted by the German cyclists' federation ADFC. For many years now, GTZ has undertaken a range of activities and has provided services aiming to help staff make the switch from driving to cycling. For instance, from 2008 onwards competent members of staff are available to carry out a cycle check.

2008 list of indicators for operations in Rödelheim

Indicator	Quantity	Reference / boundary
Facilities		
Net internal area	773 m ²	
Net internal area per staff member	35 m ²	Around 22 staff members
Consumables		
Paper consumption	172,913 A4 sheets	
Paper consumption per staff member and year, total	8,042 A4 sheets	Excl. sanitary paper
Paper consumption per staff member and day, printouts	32 A4 sheets	Excl. sanitary paper
Photocopies per staff member and year	1,880 A4 sheets	All staff
Recycled paper as % of total	99.5%	Proportion of recycled paper in overall consumption
Energy		
Total energy consumption	235,057 kWh	Electricity, gas
Total energy consumption per staff member	10,933 kWh	All staff
Electricity consumption	29,720 kWh	
Electricity consumption per staff member	2,968 kWh	All staff
Electricity consumption per unit net internal area rooms	1,382 kWh/m ²	GTZ AgenZ office rooms
Heating energy consumption	205,337 kWh	
Heating energy consumption per staff member	9,551 kWh	All staff
Heating energy consumption per unit net internal area rooms	265.64 kWh/m ²	GTZ AgenZ office rooms
Water and wastewater		
Water consumption, total	204 m ³	
Water consumption per staff member	9,263.2 l	All staff
Water consumption per staff member per day	37.1 l	250 working days
Solid waste		
No figures can be reported for individual waste streams, as under a property management agreement wastes are collected and disposed of jointly for all tenants. The charges for this are apportioned according to the net internal area of each rented property.		
Transport		
Proportion of commuters using local public transport	30%	According to 2005 mobility survey, adjusted in 2008
Emissions		
CO ₂ emissions, energy	142 t	Electricity, gas
CO ₂ emissions, commuting	15 t	Average value according to 2008 mobility survey
CO ₂ emissions, official journeys A precise determination of the emissions attributable to AgenZ is superfluous for the 2008 GTZ environmental report as all official journeys are handled by Head Office, and thus fall within the scope of the audit for Head Office.		
CO ₂ emissions, total	157 t	

Our Organisation

As an international cooperation enterprise for sustainable development with worldwide operations, the federally owned Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH supports the German Government in achieving its development-policy objectives. It provides viable, forward-looking solutions for political, economic, ecological and social development in a globalised world. Working under difficult conditions, GTZ promotes complex reforms and change processes. Its corporate objective is to improve people's living conditions on a sustainable basis.

Our Clients

GTZ is a federal enterprise based in Eschborn near Frankfurt am Main. It was founded in 1975 as a company under private law. The German Federal Ministry for Economic Cooperation and Development

(BMZ) is its major client. The company also operates on behalf of other German ministries, the governments of other countries and international clients, such as the European Commission, the United Nations and the World Bank, as well as on behalf of private enterprises. GTZ works on a public-benefit basis. All surpluses generated are channelled back into its own international cooperation projects for sustainable development.

Worldwide operations

GTZ has operations in more than 130 countries in Africa, Asia, Latin America, the Mediterranean and Middle Eastern regions, as well as in Europe, Caucasus and Central Asia. It maintains its own offices in 87 countries. The company employs nearly 13,000 staff, almost 10,000 of whom are national personnel. About 1,700 people are employed at Head Office in Eschborn near Frankfurt am Main and at various locations within Germany.

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