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## Environmental Report 2005

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# Managing Director's preface

Dear Reader,

Involving our field structure even more closely in our corporate environmental management was a leitmotif for GTZ in 2005. In that year, the guideline for performing environmental audits developed in 2004 was presented to Country Directors at the Management Conference, and was applied in practice for the very first time at the GTZ Office in Thailand. Evaluation of that first application has shown that the guideline does indeed provide significant support, especially in terms of identifying potential for improvement and informing and motivating staff.

The integration of environmental management and quality management has progressed further in 2005. Proposals made by environmental officers to the other departments of our company have succeeded in ensuring that improving environmental performance is also viewed as a priority in those departments.

The chosen focal theme of environmental management for the year 2005 at GTZ Head Office in Eschborn was "Paper". By using recycled paper wherever possible, in corporate communications too, the proportion of paper from environmentally sound sources has been raised to more than 99%. We have also succeeded in reducing the overall level of paper consumption even further. Approaches adopted in this regard focused not only on implementing technical improvements and making greater use of electronic communication, but also on motivating colleagues to use paper sparingly. A similar approach will doubtless lead to a successful outcome for the focal theme of 2006: "Improving energy efficiency and reducing energy consumption".

An important reason for choosing this theme is the completion of the refurbishment of GTZ's main building in the summer of 2006. The new façade, the use of modern heating, cooling and air-conditioning technologies, in combination with optimised configuration of office space, will all contribute to substantially reducing the building's energy consumption. We shall harness this momentum to appraise the potential for improvement in the other buildings at our Eschborn site, and to raise awareness among our colleagues of how to use energy resources prudently.

Even the most vigorous energy conservation activities will never put a company in a position

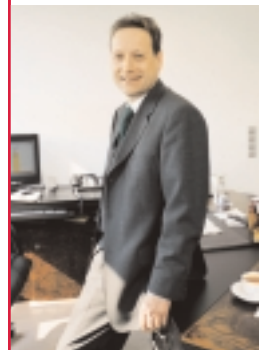
to operate entirely without consuming energy. "Sustainable business management" means minimising the adverse environmental effects of our actions. In pursuit of this principle, GTZ has since 2005 been purchasing power generated from renewable sources for all of its buildings at the Eschborn site and in part also for GTZ-Haus Berlin. This is one way in which we contribute to reducing greenhouse gas emissions, especially CO<sub>2</sub>.

Our climate protection commitment does not stop here. As a pioneering company in Germany, GTZ has set itself the target of offsetting all of its CO<sub>2</sub> emissions on a voluntary basis, and of being a fully CO<sub>2</sub>-neutral company from 2007 onwards. This is an ambitious goal. We do not aim to achieve it by purchasing CO<sub>2</sub> emissions reduction certificates of unknown origin. Our approach will instead involve investing in a specific project designed to reduce greenhouse gas emissions from palm oil production in Thailand. The present state of development of this project leads us to expect that CO<sub>2</sub> certificates will indeed be issued for GTZ for the first time in 2008.

Last year's Environmental Report met with great interest among both our own staff and our external partners. The Chamber of Auditors rated our report as being among the top third of submissions for the German Environmental Reporting Award. This positive feedback has motivated us to retain this form of reporting and to publish a detailed environmental report for 2005 too. In order to make this information accessible to non-German-speaking readers in our partner countries also, the present report is available in both German and English.

I wish you stimulating and informative reading!

Wolfgang Schmitt  
Managing Director



# Environmental policy and environmental management at GTZ

## 1.1 GTZ profile

### *Our organisation*

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH is an international cooperation enterprise for sustainable development with worldwide operations. It provides viable, forward-looking solutions for political, economic, ecological and social development in a globalised world. GTZ promotes complex reforms and change processes, often working under difficult conditions. 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, partner-country governments and international clients, such as the European Commission, the United Nations or the World Bank as well as on behalf of private enterprises. GTZ works on a public-benefit basis. Any surpluses generated are channelled back into its own international cooperation projects for sustainable development.

### *GTZ – worldwide operations*

In more than 130 countries of Africa, Asia, Latin America, the Eastern European countries in transition and the New Independent States (NIS), GTZ employs some 9,300 staff. Around 8,200

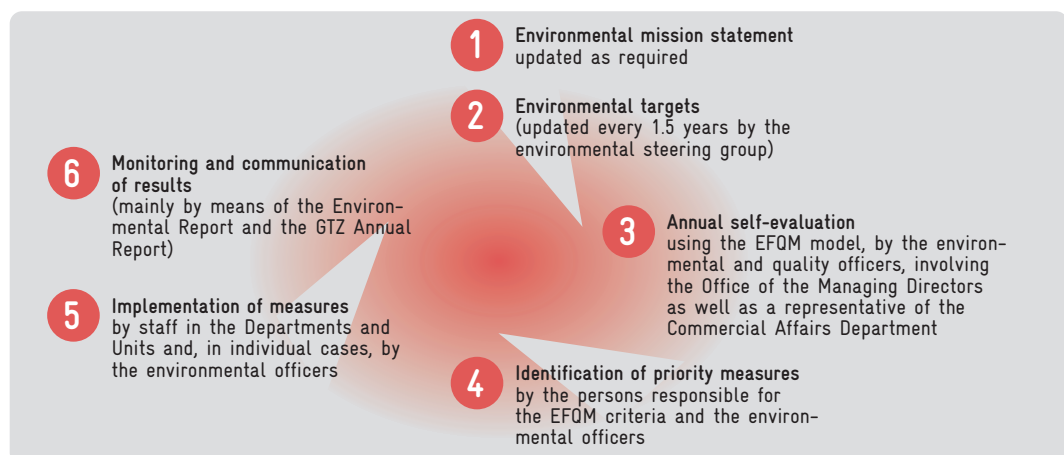
of these are national personnel. GTZ maintains its own offices in 67 countries. Some 1,000 people are employed at Head Office in Eschborn near Frankfurt am Main. In addition, about 350 people are employed in supraregional projects at various locations across Germany.

## 1.2 Integrating environmental management within overall quality management

In November 2004, GTZ's environmental management team carried out for the first time a self-evaluation of environmental management in accordance with the EFQM excellence model. This identified the potential for improvement that should be taken into account in the self-evaluations performed by GTZ's Departments and Units. A survey has found that those involved in the process are not yet all acquainted with the procedure for integrating environmental criteria within quality management, and that temporal overlap has hampered the consideration of environmental issues.

Care was thus taken before setting priorities for 2006 to ensure that the specific aspects with potential for environmental improvement had been brought to the attention of the responsible persons in the Departments and Units and could be taken up by them as they thought fit. Moreover, cooperation between GTZ's environmental management team and its Commercial Affairs Department with respect to EFQM has been

## GTZ's environmental management system



# Environmental policy and environmental management at GTZ

further improved. A representative of the Commercial Affairs Department took part in the self-evaluation of environmental management. This is particularly important because many of the proposals for improvement can only be realised in close cooperation with the facility managers, who report to the Department. Involvement of the Commercial Affairs Department will therefore continue to be made an integral element of environmental management self-evaluations in future. The final self-evaluations of GTZ's Departments and Units were not yet available in the reporting period. The 2006/2007 report will provide more detailed information on these.

### 1.3 GTZ's sustainable development and environmental mission statements

By joining the UN Global Compact in spring 2004, GTZ committed to observing the Compact's ten principles in the fields of human rights, labour and social standards, environmental protection and corruption control. We have intensified our efforts to implement these values throughout our work since then. In 2005, for the first time, GTZ formulated a mission statement on sustainable development, which dovetails excellently with the previously formulated environmental mission statement. The two mission statements are cited below:

#### **Sustainable development – GTZ's concept**

GTZ calls itself a federal enterprise working in international cooperation for sustainable development. No matter what services GTZ renders for any client, it always adheres to this concept. It is an integral part of our own vision, our mission and our values.

For us, sustainable development means:

- | Economic growth for more prosperity
- | Equal opportunities for rich and poor, North and South, men and women
- | Natural resource use for the benefit of present and future generations

To implement these ideas in practical project activities, GTZ works according to the following principles:

#### **1 Our work is holistic**

We work with many different stakeholders willing to engage in change. Together, we provide inputs wherever sustainable development can best be effected. We also know our limitations: in deadlocked situations, even the best advice cannot effect genuine change.

#### **2 Our work is process-oriented**

For us, the principle of help towards self-help means sharing responsibility with our partners. We facilitate closer interaction amongst government, the private sector and civil society.

#### **3 Our work is value-oriented**

We believe that diverse interests can be reconciled most effectively and fairly in democratic societies, under the rule of law and with a social and ecological market economy.

This theme is explored in greater detail in the GTZ Guideline "Sustainable Development".

#### **GTZ's environmental mission statement**

In accordance with our corporate identity, we successfully foster international cooperation that contributes to sustainable development in the world. We believe that responsible use of our environment and its resources safeguards the development prospects of future generations.

We are thus convinced that we as a company have a commitment to society:

- | to prevent or reduce our environmental impacts by means of systematic environmental management
- | to make sparing use of scarce resources such as energy and water, for instance by deploying eco-efficient technologies and materials
- | to implement our strategic concept of becoming a CO2-neutral company
- | to carry out and plan all GTZ projects, in the most varied sectors, with minimal environmental impact
- | to engage in participatory environmental communication with our staff in order to raise their awareness of environmental issues
- | to seek open dialogue with our stakeholders

# Environmental policy and environmental management at GTZ

This responsible approach to the environment and to natural resources is, in GTZ's view, among the supreme principles of sustainable business management. To realise these aspirations in practice, GTZ makes use of systematic corporate environmental management.

Environmental audits. At present, explicit targets have only been formulated for Head Office in Eschborn. Such targets are first elaborated by the environmental officers and then adopted by the environmental steering group. In a further step, concrete environmental measures are derived from the environmental targets and implemented; the environmental audits document their effectiveness. The environmental steering group will meet again in 2006 and review the environmental targets. The group will analyse whether the targets set in 2003 have been attained and will ascertain where there is a need for further action or adjustment.

## 1.4 Our environmental targets for operations in Eschborn

Within the framework set by our environmental mission statement, our environmental targets follow from analysis of the annually produced envi-

### Overview of environmental targets for operations in Eschborn

1 Proportion in 2005: 99.46%. The remaining share of primary fibre paper (approx. 62,000 sheets) is high-gloss, specialty or coloured paper that cannot be replaced by recycled paper.

2 Excluding consumption for refurbishment of House 1

3 Depends upon the technologies deployed in House 1 following refurbishment.

4 As the proportion of non-potable water in 2003 could not be determined, the target was set on the basis of data collected in the previous year.

5 Including offsetting through certificates

6 From 2004 onwards, CO<sub>2</sub> emissions are no longer calculated according to VfU (1996), but according to UBA (2004) or Atmosfair (2004 and 2005). The figures are thus not directly comparable. In order to be able to track target attainment, values calculated using the VfU (1996) methodology are also given.

	2003 baseline	2005 result	2005 target	Targets for later years	Target attainment
<b>Paper</b>					
Paper consumption [sheets]	12,675,500	11,469,087	11,407,950	9,506,625 (in 2009)	100%
Recycled paper as % of total	94%	99%	99%	100%	100% <sup>1</sup>
<b>Energy</b>					
Electricity consumption [kWh per staff member]	3,004	2,506 <sup>2</sup>		2,701 <sup>3</sup> (in 2009)	164%
Heating energy consumption [kWh]	6,796,125	5,060,006		5,436,900 <sup>3</sup> (in 2009)	128%
<b>Water</b>					
Potable water consumption [l per staff member]	7,849	7,667		between 7,457 and 7,064 <sup>3</sup> (in 2006)	46%
Non-potable water as % of total consumption	not determined	52%		25% <sup>3</sup> (in 2006)	208% <sup>4</sup>
<b>Solid waste</b>					
Wastes remaining for final disposal [kg per staff member]	73	53,3	65,7	51,1 (in 2007)	89%
<b>Transport</b>					
Proportion of commuters using local public transport	21%	20%	26%	40% (in 2007)	0%
Proportion of cyclists	6 %	5%	15%	30% (in 2012)	0%
<b>Emissions</b>					
CO <sub>2</sub> -emissions [t/a]	17,160	10,858		0 <sup>5</sup> (in 2007)	37%
Transport-related CO <sub>2</sub> -emissions [t per staff member]	12.61	8.56 (12.25 using 1996 VfU methodology) <sup>6</sup>	12.48	11.98 (in 2009)	57%

The annual environmental audit systematically inventories and assesses the environmental effects generated by GTZ at the Eschborn site, and determines appropriate indicators. This approach has been used since 1999 to identify the potential for reducing envi-

ronmental impact, improving efficiency and cutting costs, and to derive specific measures from these appraisals. It is now the third time that an environmental audit has been conducted for the Berlin site.



## 2.1 Operations in Eschborn

The properties operated by GTZ Head Office at the Eschborn site include five different “houses” – four office buildings and one kindergarten. In 2005 several changes occurred due to the interim move from House 1 to the rented ABB building, made necessary by refurbishment work, and the renting of further office space within the building complex of House 3. These changes also affected data collection and assessment for the present audit.

In the field of energy, it was possible to integrate the electricity, oil and gas consumption figures of the ABB house into the environmental data, while no data were available for that building in the fields of water and solid waste.

Section 6.1.1 sets out in detail the system boundaries applied for the 2005 Environmental Report.

GTZ Houses 3, 4, 1 and 2 (clockwise) in Eschborn

## Environmental audit



Double-sided photocopying saves paper

### 2.1.1 Paper

#### *The issues:*

Paper consumption is a key environmental issue at GTZ. At GTZ, as in most other service-sector companies, the vision of a paper-free office has not come true. As a consequence of the typical office and administrative operations at our Eschborn Head Office, 12,675,500 sheets of paper were consumed in 2003, the baseline year that we have adopted for specifying our environmental targets.

Considering that 94% of the paper was recycled in 2003, the production of that quantity of paper involves indirect resource consumption equivalent to approx. 4,600 kg of wood, 66,700 kg of waste paper, 1,291,000 litres of water and 185,000 kWh of energy per year.<sup>7</sup> This is joined by further environmental impacts along the value chain, arising, for example, through transportation and packaging.

#### *Our targets:*

The environmental steering group set two targets relating to paper in 2003. Firstly, paper consumption was to be reduced by 10% to a total of 11,407,950 sheets by the year 2005, and by an overall 25% down to 9,506,625 sheets by 2009. Secondly, environmental performance was to be improved by increasing the proportion of recycled paper to 99% by 2005 and to 100% by 2009. This would bring indirect resource consumption down to 53,200 kg of recycled paper, 711,000 litres of water and 129,000 kWh of energy per year.<sup>7</sup>

#### *What we are doing:*

In 2005, environmental management concentrated on providing incentives to reduce paper consumption. To that end, paper-saving tips were compiled by particularly committed staff and

<sup>7</sup> Calculated using the "Nachhaltigkeitsrechner" sustainability calculator at <http://www.initiative-papier.de/index.php>

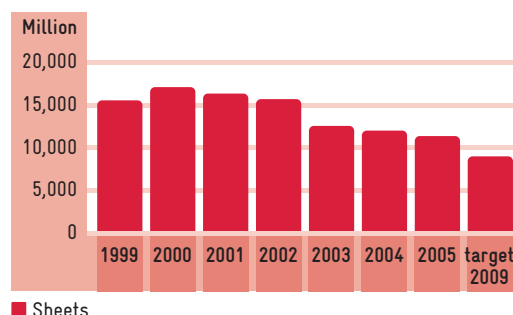


## Environmental audit

groups, and presented in an attractive visual format on two pages. Applied rigorously, these comprehensive notes on how to make optimal use of computerised systems in workplace organisation (electronic re-submission, optimised printing etc.) serve to reduce paper consumption. Further tips were provided on paper handling, photocopying and technological options for paper reduction. Twenty pilot users tested the tips to further optimise their user-friendliness. The tips were finally presented to office managers at a workshop, and posted on the GTZ Intranet. In support of these measures, the number of printers allowing double-sided printing was increased in the reporting period by 15 units to a new total of 45. A continuation of this trend can be expected in the coming years. At GTZ Head Office recycled paper is used exclusively, both for official correspondence and for everyday office operations; the whiteness of this paper corresponds to that of a primary fibre paper, making it highly acceptable.

### The results:

Use of recycled paper has been further increased in 2005. The rate is now 99.46%. GTZ has thus achieved the target it set itself for that year (99%). Overall paper consumption was reduced in the reporting period by 655,285 to 11,469,087 sheets. Nonetheless, this result falls short of the target set for 2005 by about 61,000 sheets. Indirect resource consumption in paper production now totals 372 kg of wood, 63,900 kg of waste paper, 886,000 litres of water and 157,000 kWh of ener-



gy per year.<sup>8</sup> It is striking that the number of photocopies made per member of staff has been rising slightly again in the last two years, while overall paper consumption has dropped.

### Outlook:

Although the improvement targeted for 2005 was not quite achieved, good progress has been made in reducing paper consumption. To achieve the reduction targeted by 2009, efforts to establish sparing use of paper resources in everyday office operations will need to continue vigorously.

### A note in passing:

The environmental audit presented here does not cover GTZ documentation and publishing. Nonetheless, here too, the vast majority of printed material – be it business cards, project reports or the GTZ Annual Report – is already printed on environmentally sound recycled paper.

Paper <sup>9</sup>	2001	2002	2003	2004	2005	Target for 2009	Target Attainment
Paper consumption [sheets]	15,801,000	15,431,500	12,675,500	12,124,372	11,469,087	9,506,625	38%
of which photocopies	5,863,938	5,112,059	3,763,883	3,706,570	3,711,839		
Paper consumption [sheets/staff member]	14,483	14,093	10,965	10,749	10,222		
of which photocopies [sheets/staff member]	5,375	4,669	3,256	3,286	3,308		
Recycled paper as % of total	45%	56%	94%	97%	99%	100%	100% <sup>10</sup>

### Paper consumption at GTZ Head Office

<sup>8</sup> From the 2003 baseline

### Paper Profile

<sup>9</sup> Excluding documentation and publishing

<sup>10</sup> Proportion in 2005: 99.46%. The remaining share of primary fibre paper (approx. 62,000 sheets) is high-gloss, specialty or coloured paper that cannot be replaced by recycled paper.

## Environmental audit

### 2.1.2 Solid waste

#### *The issues:*

GTZ Head Office mainly houses office workplaces. In contrast to manufacturing enterprises, the environmental issues arising in connection with solid wastes thus tend to be of minor relevance. The largest waste fractions comprise paper wastes and commercial wastes with a make-up similar to domestic refuse; GTZ's environmental targets address the reduction of these two.

3,162 tonnes of construction waste were generated in connection with the refurbishment of

#### *What we are doing:*

The example of paper illustrates particularly well how preventing waste is the priority goal. The paper-saving measures set out in Section 2.1.1 have resulted in reduced paper consumption. The reduction of paper purchases reduces paper wastes accordingly. Saving paper thus means preventing waste at the same time. It is naturally not possible to dispense entirely with paper usage. The wastes that do arise, however, are consigned 100% to recycling.

The situation is similar for canteen wastes, electroscrap and bulky wastes. Here, too, the available

#### Solid waste profile

Waste	2001	2002	2003	2004	2005	2007	Target attainment
Paper waste [kg]	121,340	135,120	144,980	102,580	77,120		38%
Wastes remaining for final disposal [kg]	112,100	113,760	86,370	90,080 <sup>11</sup>	42,660 <sup>11</sup>		
Total waste [kg]	361,100	432,570	393,300	361,250 <sup>11</sup>	200,550 <sup>11</sup>		
Paper waste [kg per staff member]	108.1	120.0	122.1	115.6	96.6		
Wastes remaining for final disposal [kg per staff member]	99.9	101.0	72.8	101.5 <sup>12</sup>	53.3	51.1	89%
Total waste [kg per staff member]	321.8	384.2	331.3	407.1 <sup>12</sup>	251.3 <sup>12</sup>		

<sup>11</sup> Excluding the ABB building, and excluding refurbishment work carried out in House 1

<sup>12</sup> The figures for staff working in the ABB building were excluded when calculating these ratios.

House 1 in the reporting period. Of these 5.6% are hazardous wastes (mainly asbestos-containing building materials and insulating materials) and 35% are recoverable wastes.

These construction wastes were not taken into account in the analysis, however, as they represent a unique occurrence and thus no reference figures are available from previous years. Furthermore, the waste statistics do not contain data for those staff members working in the ABB building, as no waste data are available for this building.

#### *Our targets:*

GTZ's waste management strategy builds upon the principles established by the German Closed-Loop Materials and Waste Management Act, under which wastes must first and foremost be prevented and, as a second-best option, be consigned to materials or energy recovery. The final disposal of wastes is only the third-level option.

GTZ had set itself the target of reducing the quantity of wastes remaining for final disposal by 10% by the year 2005, and by 30% by the year 2007. The data of GTZ's 2003 environmental audit are taken as the reference baseline.

recycling opportunities are extensively utilised.

It is important when reducing commercial wastes with a make-up similar to domestic refuse that waste fractions be separated rigorously. This is a precondition for consigning the largest possible proportion of recoverable materials to an appropriate recycling path, and not to final disposal.

#### *The results:*

The reduction in paper consumption set out above is reflected in the waste figures. The ratio of paper wastes per staff member was reduced in 2005 by 16.4% to 96.6 kg. The total quantity of waste per staff member has been reduced by 38.8% from the previous year, to a new level of 251.3 kg. A welcome finding is that the largest reduction was achieved in "wastes remaining for final disposal" (minus 47.7%), so that the recovery ratio has reached that of 2003 (78%) again. The refurbishment work carried out in House 1 and the resulting move of many staff members to GTZ's other buildings and to the ABB building explains this development. In the year 2004, when House 1 had to be cleared out by staff, the quantity of wastes remaining for final disposal

## Environmental audit

was observed to rise from 72.8 to 101.5 kg per staff member. Presumably the opportunity was used to dispose of equipment, materials etc. that were no longer needed. It appears that in 2005 the free capacities were utilised, with the result that the quantity of wastes remaining for final disposal dropped to 53.3 kg per staff member, thus outperforming the target of 65.7 kg set for that year. It is hard to predict how this indicator will continue to develop, however, as in summer 2006 House 1 will be reoccupied, possibly leading to a rise in the quantities of wastes remaining for final disposal similar to that which occurred in 2004.

### 2.1.3 Water

#### *The issues:*

In the year 2003 about one-third of the global population had no access to clean drinking water. This problem is the main cause of disease in developing countries.<sup>13</sup> Drinking water is the foodstuff subject to the strictest controls of all, and its supply is not at risk in Germany under normal circumstances. In very dry summer months, however, such as in 2003, regional bottlenecks can indeed arise. Considering advancing climate change, which has a potential to cause an increased frequency of hot and dry summers in Germany, the issue of using water resources sparingly needs to be kept in sight. This can certainly also make sense in regions not at risk of water scarcity. Saving water always also saves the energy consumed to extract, transport, process and treat the water in the course of its materials-flow chain. The connection is even clearer when considering

#### *Outlook:*

Activities aiming to prevent paper waste and to raise awareness among staff for waste-related issues will continue in 2006. In connection with the move back into House 1, in particular, it will be important to give increased attention to correct separation of waste fractions.

hot water savings. To heat 1 litre water by 1° Celsius, 4.2 kilojoules of energy are needed. The same amount of energy could accelerate 1 litre of water from 0 to 329 km/h.<sup>14</sup> Reducing hot water consumption thus also contributes indirectly to climate protection.

#### *Our targets:*

The consumption of potable water is to be reduced from its 2003 level of 7,849 l per staff member by 5-10% by the year 2006. The use of non-potable water (extracted groundwater)<sup>15</sup> is to be intensified, so that by 2006 it will be possible to meet 25% of overall water demand by non-potable water.

#### *What we are doing:*

In order to reduce water consumption, all sanitary fittings in Houses 2 and 3 were already equipped with perlators in 2004. Perlators are simple mechanical devices that modify the flow of water. Fitted to the taps, they aerate the flow and

13 GTZ's House 1 is on top of an aquifer, so that non-potable water must be pumped out continuously.

14 Figures for 2004 and 2005 do not include the water consumption arising due to refurbishment work.

15 Data collection problem. The true value is lower than that listed here.

16 Because the proportion of non-potable water in 2003 could not be determined, the target was set on the basis of data collected in the previous year.

Water consumption <sup>14</sup>	Result in 2001	Result in 2002	Result in 2003	Result in 2004	Result in 2005	Target for 2006	Target attainment
Potable water consumption [l per staff member]	13,364	6,925	7,849	6,559	7,667	< 7,457	46%
Potable water consumption (m <sup>3</sup> )	14,994	7,797	9,317	5,820	6,118		
Non-potable water consumption (m <sup>3</sup> )	2,259	16,388	n.e.	6,952	6,543		
Total water consumption (m <sup>3</sup> )	17,253	24,185 <sup>15</sup>	n.e.	12,772	12,661		
Non-potable water consumption as % of total	13	68 <sup>15</sup>	n.e.	54	52	25	208% <sup>16</sup>

### Water profile

## Environmental audit

17 Siehe auch <http://www.perlator.de/perlator/perlator/index.html>

thus increase its volume. As a result, less water is consumed while the same utility is provided.<sup>17</sup> In addition, the installation of optical sensors to the sanitary fittings was completed in House 2 in 2004; these ensure that water only flows when it is really needed.

Both technological measures will also be deployed in the refurbished House 1 (see Section 2.1.6). The groundwater pumped out of the subsoil is not discharged uselessly to the sewerage. It is recirculated in the toilet flushes of Houses 2 and 3, and is used to operate the air-conditioning system in the data backup room, to supply the grease trap in the canteen, and to water the outdoor areas.

### ■ 2.1.4 Energy consumption

#### **The issues:**

Energy supply in Germany stems mainly from nuclear power and fossil energy sources (coal, gas, oil). The disadvantage of this today is above all that the resources required to produce energy are not unlimited and their use will have adverse effects upon the quality of life of future generations. Combustion of fossil energy carriers releases carbon dioxide (CO<sub>2</sub>), which contributes to climate change (cf. Section 2.1.5), while nuclear power plants produce radioactive waste, which can be safely disposed of only with great difficulty. One approach to solving these problems promoted by the German Federal Government is to make more efficient use of energy and to foster renewable energy sources (biomass, wind, hydro and solar).

This section examines the consumption (input) of energy. Section 2.1.5 addresses the aspects relating to CO<sub>2</sub> emissions and climate protection. GTZ Head Office uses energy mainly in the form of electric power and gas for heating. In addition, the travel generated by GTZ operations (official travel and commuting to work) contributes indirectly to overall energy consumption (see Section 2.1.5).

#### **The results:**

Potable water consumption rose by 1,108 l per staff member in 2005 relative to the previous year. Its level is thus again above the target ratio of a maximum of 7,457 litres set for 2006. In addition to the consumption figures listed in the table, approximately 995 m<sup>3</sup> water was consumed in 2004 for refurbishment work in House 1, and a further 1,265 m<sup>3</sup> in 2005.

In 2003, however, no data could be determined for the proportion of non-potable water. The target value of 25% was thus set on the basis of data collected in the previous year. The data for 2004 and 2005 have shown that the proportion of non-potable water has stabilised at more than 50%, thus greatly outperforming the target.

#### **Our targets:**

The environmental steering group formulated the following energy-related targets in 2003:

Electricity consumption to be cut by 10% to a level of 2,701 kWh per staff member by the year 2009.

Over the same period, a reduction of overall energy consumption for heating by 20% to 5,436,900 kWh per annum is targeted.<sup>18</sup>

#### **What we are doing:**

The refurbishment of House 1 and the technologies deployed there are expected to deliver a major improvement in energy efficiency (see Section 2.1.6).

Within the context of our green procurement activities, wherever possible we apply environmental criteria such as the energy consumption of electronic equipment in addition to the conventional criteria (see Section 2.1.8).

#### **The results:**

In 2005 the ratio of electricity consumption per staff member was reduced by 15.4% (455 kWh) from the previous year. Compared with 2003, the improvement amounts to 16.6%. It needs to be kept in mind that the data for 2005 do not include consumption for building refurbishment work.

18 The improvements depend upon the technologies deployed in the refurbished House 1.

## Environmental audit



Switching off prevents stand-by consumption

If this item were included as in 2004, then the improvement compared with 2004 would amount to 7.4% and the improvement compared with 2003 would be 8.7%.

The results in terms of energy consumption for heating purposes are even more impressive. GTZ succeeded in reducing overall consumption during the reporting period by 1,697,170 kWh (25.1%) to 5,060,006 kWh, thus already outperforming its target for 2009. Compared with 2003, consumption of heating energy has been cut by 25.7%. The explanation for the major savings in 2005 is that House 1 was no longer used due to the refurbishment work, and staff were housed in the much more energy-efficient Houses 2 and 3 and in the ABB building. Even lower heating energy consumption can be expected following the

move back into House 1 thanks to the technologies deployed there (cf. Section 2.1.6). It needs to be taken into consideration in all forecasts, however, that consumption always depends greatly upon the outdoor temperatures prevailing during a specific heating period. The outdoor temperatures in the 2005 heating period (January-April and September-December) were on average higher by approx. 0.5°C than those in 2004. On the other hand, the February of 2005 was distinctly colder than that of 2004, by an average of approx. 0.8°C.

### **Outlook:**

GTZ expects the refurbishment of House 1, due to be completed in early summer 2006, to deliver a double-digit percentage improvement in energy efficiency for this building. Enhanced thermal

## Environmental audit

### Energy profile

19 Including photovoltaic system. Refurbishment work on House 1 is included in the figures for 2004, but excluded in the figures for 2005.

20 Excluding photovoltaic system. "Primary energy is energy contained in raw fuels and any other forms of energy received by a system as input to the system. Primary energies are transformed in energy conversion processes to more convenient forms of energy, such as electrical energy and cleaner fuels. In energy statistics these forms are called secondary energy." ([http://en.wikipedia.org/wiki/Primary\\_energy](http://en.wikipedia.org/wiki/Primary_energy))

21 Further information is available at <http://www.green-building.de>

### Heating energy consumption at GTZ Head Office

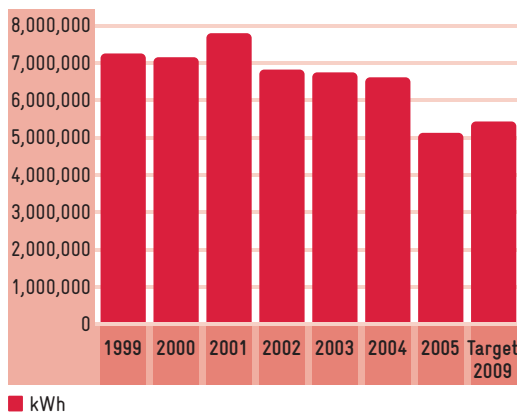
Energy consumption	2001	2002	2003	2004	2005	Target for 2009	Target attainment
Electricity consumption <sup>19</sup> (kWh)	3,753,441	3,719,572	3,565,500	3,422,637	2,877,327		
Electricity consumption <sup>19</sup> [kWh per staff member]	3,345	3,303	3,004	2,961	2,506	2,701	164%
Heating energy consumption [kWh]	7,767,750	6,820,954	6,796,125	6,757,176	5,060,006	5,436,900	128%
Heating energy consumption [kWh per staff member]	6,923	6,058	5,725	5,845	4,408		
Total secondary energy <sup>19</sup> [kWh per staff member]	10,268	9,361	8,729	8,806	7,149		
Total primary energy <sup>20</sup> [kWh per staff member]	17,943	16,864	15,573	15,570	13,315		

insulation will make the prime contribution to this improvement, in addition to further technical measures (see Section 2.1.6).

GTZ's environmental management team has adopted energy as its focal theme for 2006, following paper as the focal theme in 2005. Work on this theme will involve identifying further potential for improving energy efficiency, including Houses

2 and 3, and, if possible, measures to tap this potential. An examination of whether participation in the European Union's GreenBuilding programme can foster these activities is currently under way.<sup>21</sup>

Furthermore, activities aiming to raise staff awareness of this issue will be continued.



## Environmental audit



### ■ 2.1.5 CO<sub>2</sub> emissions / mobility

#### *The issues:*

Global climate change is one of the most high-profile environmental issues of our times. The scientific community has made it clear that anthropogenic emissions of greenhouse gases such as carbon dioxide (CO<sub>2</sub>) are changing the world's climate and will impact severely upon the quality of life of everyone over the long term. CO<sub>2</sub> is formed when fossil energy sources are burnt, and because of the quantity of worldwide emissions it is influencing the climate significantly. Within the context of its projects, and with reference to the Kyoto Protocol, GTZ fosters the use of renewable energy sources and the reduction of greenhouse gas emissions in its partner countries. GTZ is itself an emitter of carbon dioxide; this is due to its energy demand and its high volume of business-related mobility. Now that we have swit-

ched our electricity procurement to renewable sources, the bulk of CO<sub>2</sub> emissions is caused by official journeys by air. Nonetheless, daily commuting and the consumption of heating energy also contribute to GTZ's CO<sub>2</sub> emissions inventory.

#### *Our targets:*

Transport-related CO<sub>2</sub> emissions are to be reduced by 1% to 12.48 t per staff member by the year 2005 and by 5% to 11.98 t per staff member by 2009<sup>22</sup>. In support of this target, a further goal is to increase the proportion of people who use local public transport services for commuting to work from 21% (in 1999) to 26% (target for 2005) and, in a further step, to 40% (target for 2007). The proportion of cyclists is to be increased from 6% (1999) to 15% (target for 2005) and, over the long term, to 30% (target for 2012). GTZ aims to become a CO<sub>2</sub>-neutral enterprise by the year 2007. All non-preventable carbon dioxide emis-

Cooling/Heating panels prior to being installed in the new ceilings of house 1

<sup>22</sup> From the 2003 baseline

## Environmental audit

23 Further information on the CDM is available at <http://www.gtz.de/en/themen/umwelt-infrastruktur/umweltpolitik/4185.htm>

### Mobility and CO<sub>2</sub> emissions

24 Using VfU (1996) methodology until 2003, UBA (2004) methodology from 2004 onwards. Extrapolated from 1999 staff survey until 2004, calculated from 2005 staff survey in 2005.

25 Using VfU (1996) methodology until 2003, UBA (2004) methodology from 2004 onwards

26 Using VfU (1996) methodology until 2003, atmosfair (2004 and 2005) methodology from 2004 onwards

27 From 2004 onwards, CO<sub>2</sub> emissions are no longer calculated according to VfU (1996), but according to UBA (2004) and atmosfair (2004 and 2005). The figures are thus not directly comparable. In order to be able to track target attainment, values calculated using the VfU (1996) methodology are also given.

28 Including offsetting through certificates.

sions are to be offset on a voluntary basis by purchasing Clean Development Mechanism (CDM) emission credits under the Kyoto Protocol that correspond to GTZ's own emissions.<sup>23</sup>

#### *What we are doing:*

GTZ conducted a survey in 1999 questioning its staff about their mobility behaviour. That survey gathered information on, for instance, the modes of transport used for daily commuting, the average time spent travelling and travel distance. The

data generated by this mobility analysis provided the basis for the calculation of CO<sub>2</sub> emissions caused by commuting and by weekend journeys home. As the survey cannot be repeated each year, values for the period from 2000 to 2004 were simply adjusted according to the changed numbers of staff. In April 2005, however, a fresh mobility survey was carried out among GTZ staff. The data provided in the present Environmental Report thus paint a more accurate picture of the real situation.

	Result in 2001	Result in 2002	Result in 2003	Result in 2004	Result in 2005	Target for 2009	Target attainment
<b>Official journeys within Germany</b>							
Air (km)	1,093,239	1,419,272	1,651,526	1,466,360	1,427,065		
Rail (km)	1,196,569	1,789,583	1,563,613	1,681,043	2,053,812		
GTZ company car fleet (km)	115,426	78,328	90,722	95,200	92,555		
<b>Total (km)</b>	<b>2,405,234</b>	<b>3,287,183</b>	<b>3,305,861</b>	<b>3,242,603</b>	<b>3,573,432</b>		
Share of air (%)	45.45	43.18	49.96	45.22	39.94		
Share of rail (%)	49.75	54.44	47.30	51.84	57.47		
Share of car (%)	4.80	2.38	2.74	2.94	2.59		
<b>Official journeys abroad</b>							
<b>Total (km)</b>	<b>44,374,963</b>	<b>48,802,627</b>	<b>54,864,720</b>	<b>46,662,240</b>	<b>46,522,260</b>		
	Result in 2001	Result in 2002	Result in 2003	Result in 2004	Result in 2005	Target for 2009	Target attainment
<b>CO<sub>2</sub> emissions attributable to ...</b>							
Commuting (t CO <sub>2</sub> ) <sup>24</sup>	2,341	2,350	2,481	1,143	1,727		
Weekend journeys home (t CO <sub>2</sub> ) <sup>24</sup>	688	691	729	477	316		
Official journeys by rail (t CO <sub>2</sub> ) <sup>25</sup>	54	81	70	111	136		
Official journeys by air (t CO <sub>2</sub> ) <sup>26</sup>	8,981	9,948	11,270	7,559	7,405		
Official journeys by car (t CO <sub>2</sub> ) <sup>25</sup>	37	25	29	23	22		
<b>Total transport (t CO<sub>2</sub>)</b>	<b>12,101</b>	<b>13,095</b>	<b>14,579</b>	<b>9,313</b>	<b>9,606</b>		
Total transport (t CO <sub>2</sub> per staff member)	11.09	11.96	12.61	8.26 (11.40 using VfU methodology 1996) <sup>27</sup>	8.56 (12.25 using VfU methodology 1996) <sup>27</sup>	11.98	<b>57%</b>
Energy consumption (t CO <sub>2</sub> )	4,001	3,773	2,582	1,808	1,253		
<b>Total CO<sub>2</sub> emissions (t CO<sub>2</sub>)</b>	<b>16,102</b>	<b>16,867</b>	<b>17,160</b>	<b>11,121</b>	<b>10,858</b>	<sup>028</sup> (by 2007)	<b>37%</b>

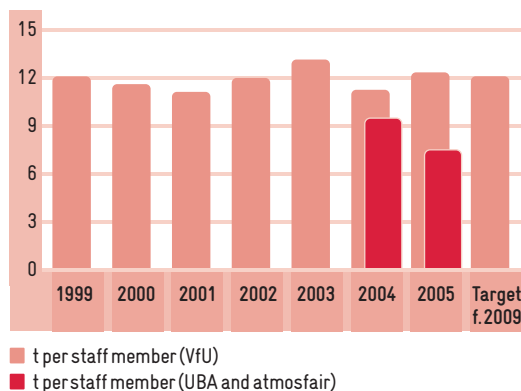


## Environmental audit

GTZ's mobility strategy aims to reduce the CO<sub>2</sub> emissions generated by commuting. The "Jobticket" handed out to 660 employees in the reporting period<sup>29</sup> allows the eligible persons to use local public transport services for the daily trip to work. This Jobticket, available since July 2003, is financed by staff relinquishing two free half-days (Wäldchestag and Faschingsdienstag) and through GTZ contributions. Jobticket holders only need to pay the ticket's value for tax purposes, amounting to EUR 5 per month.

Cycling is a further alternative to private motor vehicle (car) traffic. GTZ staff demonstrated this impressively by once again providing a great number of participants in the "Bike to Work" ("Mit dem Rad zur Arbeit") campaign initiated by the health insurer AOK Hessen and ADFC, the German cyclists' association. Cycling in teams of four, 108 GTZ employees biked to work on at least 50% of their working days in the period from 1 to 30 June 2005. This was 11 more participants than in the previous year. GTZ's mobility concept received the "Business on the Move" ("Wirtschaft in Bewegung") award in 2004. Implementation of that concept continued in 2005 and was made an integral part of the modernisation of House 1. Cycle parking facilities, showers and lockers for cycling gear help cycling colleagues keep up their environmental commitment.

The greater part of GTZ's CO<sub>2</sub> emissions is attributable to the frequent and scarcely avoidable official journeys. Wherever possible, air travel is to be reduced by switching to rail. GTZ will carry out compensatory measures on a voluntary basis to offset all unavoidable CO<sub>2</sub> emissions. Within the context of CDM activities, GTZ will not purchase anonymous CO<sub>2</sub> certificates, but will rather invest in a selected CDM project in Thailand. It is anticipated that GTZ will acquire greenhouse gas emission rights for the first time in 2008. Transportation is not the only activity area generating carbon dioxide emissions. The consumption of heating energy and electricity also contributes to climate change if that energy does not come from renewable sources. Since 2005, all of GTZ's buildings at the Eschborn site (Houses 1-5 and ABB building) procure electricity that comes exclusively from renewable sources; this minimises adverse environmental effects.



### The results:

Compared with the previous year, transport-related CO<sub>2</sub> emissions rose in 2005 by about 300 kg per staff member.<sup>30</sup> The mobility analysis carried out in April 2005 showed that this rise is caused largely by commuting. A look at the findings of the last mobility analysis conducted in 1999 shows that private motor vehicle traffic has grown since then by 8% to a present proportion of 73%. In total, GTZ staff travel 41,700 km by car each day to get to work and back home again. The proportion of local public transport service users has not reached the 26% targeted for 2005, but has in fact dropped by 1% to 20%. The proportion of cyclists has also dropped. Instead of the targeted 15% by 2005, only 5% of staff now cycle to work (1999: 6%).

One positive development, in contrast, is that the CO<sub>2</sub> emissions attributable to official journeys and weekend journeys home have dropped by comparison with 2004. When the environmental targets were formulated in 2003, CO<sub>2</sub> emissions were calculated using the VfU standard of 1996. In the meantime the state of the art has advanced, so that a decision was taken to use more current CO<sub>2</sub> factors when determining indicators from 2004 onwards, namely those developed by the German Federal Environmental Agency (Umweltbundesamt, 2004) and atmosfair (2004). Use of this new inventorisation methodology means that the data reported here are much more accurate, but that a direct comparison with the year 2003 and the targets adopted then is not possible.

To track attainment of targets, it has thus become necessary to perform parallel calculations using the VfU standard for the years 2004 and 2005. These show that transport-related CO<sub>2</sub> emissions

### Transport-related carbon dioxide emissions

<sup>29</sup> As per 31 December 2005

<sup>30</sup> Inventorisation methods: UBA, 2004 and atmosfair, 2005

## Environmental audit

in 2004 amounted to 11.4 t per staff member, and 12.25 t per staff member in 2005. A value of at most 12.48 t per staff member was the target that had been set for 2005; this target was achieved despite the increase in emissions in the past year. In order to achieve the reduction target for 2009, however, it will be essential to make additional efforts to reverse the negative trend of 2005. The switch to a different inventorisation methodology also affects the overall quantity of CO<sub>2</sub> emissions. The reduction in 2005 by 263 t compared with the previous year results entirely from the lower heating energy consumption and from the full switch to electricity procurement from renewable sources (cf. Section 2.1.4). The current state of developments makes it reasonable to expect that the CDM project will offset all non-avoidable CO<sub>2</sub> emissions from 2007 onwards.

31 See <http://www.cdmgoldstandard.org>

32 "The energy consumption of the refrigeration plant can be reduced significantly through free (ambient air) cooling, since after the refurbishment the chillers are only operated when the outside temperature exceeds 12°C. For lower temperatures, cooling demand is satisfied through heat exchange with ambient air."

### Resource consumption for house 1 refurbishment

#### 2.1.6 Refurbishment of House 1

Refurbishment of the main GTZ Head Office building at Eschborn continued throughout 2005. The following table provides information on resource use.

Staff are scheduled to move back to House 1 during the summer of 2006. The main environmental aspects of the refurbishment project (removal of noxious substances, energy efficiency, wastewater management etc.) were already discussed in the 2004 Environmental Report. This section highlights some of the building services installations that help improve the environmental situation.

Water consumption (m <sup>3</sup> )	1,265
Electricity consumption (kWh)	270,068
<b>Waste (t)</b>	
Non-hazardous, recovered	1,043
Hazardous, recovered	63
Non-hazardous, to final disposal	1,943
Hazardous, to final disposal	113

#### **Outlook:**

In 2006, GTZ will once again participate in the "Bike to Work" campaign, this time scheduled nationwide from June to August. It is expected that GTZ will continue to provide a large number of participants. Further progress is planned in 2006 for the CDM project to compensate CO<sub>2</sub> emissions. By installing a new, locally manufactured effluent treatment plant in a palm oil factory in Thailand, the methane arising in the purification process will be captured in future and utilised as an energy source. The plant will generate about 30,000 certified emission rights per year, to which leading non-governmental organisations will apply strict ecological and social standards.<sup>31</sup> Before the investor can start building the plant, national permits that allow registration of the project need to be sought in Thailand and Germany. The plant is due to start operations in 2007, from when onwards emissions can be saved and certificates generated, and actual compensation will begin.

#### **Heating installation:**

Before the refurbishment the heating installation consisted of two boilers with a total capacity of 2,200 kW and static radiators. After the refurbishment, House 1 only requires one 600 kW condensing boiler that supplies the new ceiling-mounted radiators. The thermal insulation is based on the latest energy saving regulations for exterior walls, piping and fittings.

#### **Cooling:**

The building specification has two main objectives with regard to indoor conditions and refrigeration systems:

1. Comfortable room conditions are established through the new façade, improved shading devices, and 'cooling panels' and ventilation systems supplied by the cooling plant.
2. A reduction in energy consumption is achieved through indirect free cooling<sup>32</sup>, adiabatic cooling of the exhaust air, and heat recovery.

## Environmental audit



### **Sanitary engineering:**

Drinking water is supplied via the sanitary unit with backwash filter located in the basement<sup>33</sup> and a pressure boosting system. The drinking water is distributed to different areas via a manifold. The washstands are equipped with optical fittings.

### **Well water utilisation:**

The sanitary unit also contains the well water system. Groundwater from House 2 is treated and pumped to House 1 into a buffer tank with pressure boosting system. The well water is utilised for conventional toilets (without 'ecosan' system), adiabatic cooling, filling of the grease trap, and watering of outdoor areas.

### **Drainage system:**

Drainage is handled via separate systems for general wastewater, water containing grease, and water from urinals.

### **Lifts:**

In 2003 the DC drives of the lift systems were replaced with controlled three-phase AC drives, leading to energy savings of approximately 40%. These systems have been retained during the refurbishment.

### **Thermal transmittance:**

Window U value (glass and frame): 1.4 W/m<sup>2</sup>/K  
 U value of exterior walls and roof: 0.3 W/m<sup>2</sup>/K  
 U value of basement ceiling: 0.4 W/m<sup>2</sup>/K

**Modern, centrally controlled air-conditioning systems save energy**

<sup>33</sup> The solids deposited on the filter surface are rinsed off using a small proportion of the liquid flow. A rotor circulating above the filter surface acts like a vacuum cleaner and discharges the solids from the filter via a connected pipe

## Environmental audit

### ■ 2.1.7 Internal and external environmental communication

Internal environmental communication makes an important contribution to informing GTZ staff about environmental issues, raising their awareness and eliciting their active involvement. This mainly makes use of GTZ's own channels of corporate communication – the Infoscreen at the entry to the canteen, the "gtz intern" staff periodical, the "gtz news" portal and the pages of GTZ's environmental officers in the Intranet. Corporate environmental performance is reported regularly to the Staff Council and at employee meetings. Furthermore, environmental management is a firm component of GTZ's Annual Report, which contains a section summarising the key aspects of the issues enlarged upon in the present Environmental Report.

"gtz news" uses the Intranet to provide information on environmental issues



The United Nations World Environment Day on 5 June each year provides a special opportunity to boost staff awareness and GTZ carries out a range of activities to mark the occasion. In 2005, a battery collection campaign was organised, which succeeded in consigning more than 2,500 spent batteries and accumulators to environmentally sound disposal over the period from 6 June to 18 July. In addition, a nutrition quiz was organised in cooperation with the health insurer AOK. As noted in Section 2.1.5 above, GTZ staff took part for the third time in the "Bike to Work" campaign organised by AOK and ADFC, the German cyclists' association. The number of participants increased further by comparison with the pre-

vious years. Mobility and transport were also the themes of a staff survey carried out in April 2005. GTZ has set itself the goal of offsetting all non-preventable carbon dioxide emissions by means of a GTZ-financed measure in Thailand, as set out in Section 2.1.5. Information on this project and its progress is now available to all staff via the Intranet.

GTZ published a detailed Environmental Report, going into greater substantive depth than the previously published environmental audits, for the first time for 2004. The Chamber of Auditors rated GTZ's 2004 Environmental Report among the top third of submissions to the German Environmental Reporting Award. This success confirms the quality of GTZ's first Environmental Report and has motivated the Environmental Officers to produce a comprehensive report for 2005 too. Following numerous enquiries received from non-German-speaking contacts, an English version of the 2005 report has been produced in addition to the German version.

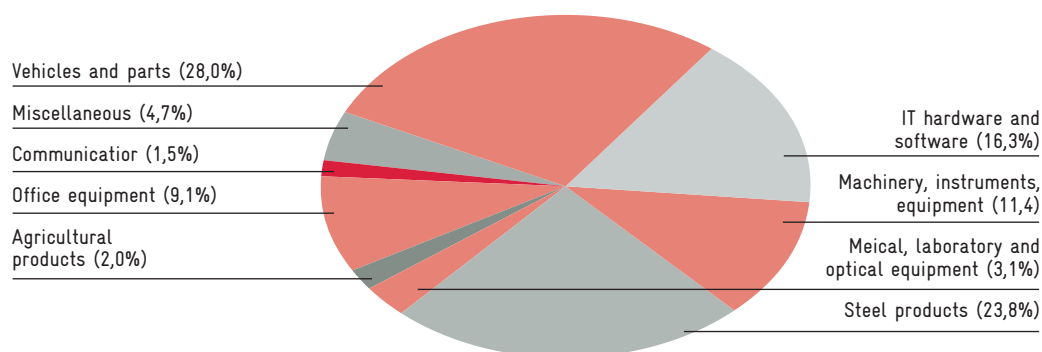
### ■ 2.1.8 Green procurement

GTZ in Eschborn purchases products subjected to various demands are placed in terms of cost-effectiveness, functionality, deployability abroad, warranties and environmental performance. Some of these products are used in GTZ's offices in Germany, and some in offices and projects in developing countries. Altogether 2,016 procurement contracts were entered into in 2005, with a total volume of EUR 29.8 million. An unusual item in 2005 was the procurement of steel products for a low-cost housing project in Ethiopia. A green procurement strategy paper was drawn up for the first time in 2002 to provide guidance for GTZ staff. This has been updated annually since then and is available in the GTZ Intranet.

By adopting this strategy paper, GTZ has committed to taking environmental criteria into account in its procurement procedures when preparing invitations to tender insofar as such criteria are justifiable in line with the binding statutory provisions (e.g. tendering and contracting rules for building work, rules for award of public service contracts) with which GTZ must comply in public procurement. GTZ's general procurement

## Environmental audit

Procurement of equipment and materials by GTZ Head Office in 2005



terms and conditions, which all contractors must recognise in binding form, require the use of environmentally sound packaging.

Fifty percent of the procurement budget in 2005 concerned the purchase of frequently required equipment and materials (e.g. software and computer hardware, office materials, motor vehicles). GTZ Head Office carries out such purchasing by entering into framework contracts with three-year terms. Specifications and the specific contracts awarded under the framework contracts stipulate criteria for environmentally sound products (e.g. lead-free, cadmium-free and mercury-free batteries and accumulators, requirements to supply products bearing nationally recognised ecolabels such as the German "Blue Angel"). Such criteria are rated and taken into account accordingly in the contracts concluded. These measures ensure, for instance, the increase in the proportion of recycled paper (now over 99%) described in further detail in Section 2.1.1. Preference is given to electronic equipment such as monitors, printers, PCs, notebook computers etc. that bear the TCO standard label indicating particularly low radiation and high energy efficiency. GTZ Head Office procured at least 80 printers and 250 notebook computers in 2005 that had been awarded the "Blue Angel" for their particular environmental performance.

The conclusion of further framework contracts taking environmental criteria into account is planned in 2006 for a range of product groups – tools, tyres, Solar Home Systems, power generators, and motor vehicle parts.

The relevance of procurement activities within technical Development Cooperation has changed greatly in recent years. The volumes procured through GTZ Head Office have shrunk considerably. There are three main reasons for this.

Development Cooperation has become more political, projects concerned with government consultancy and policy advice have gained importance, and procurement-intensive project approaches such as are found in agriculture and vocational training are diminishing. The decentralisation of tasks has meant that more goods are being procured by GTZ Offices abroad in developing countries, where one outcome of globalisation has been that the available range of products has improved. The procurement volume handled by GTZ Offices abroad totalled EUR 69.5 million in 2005. This is twice the volume of procurement in Germany.

In view of this shift, GTZ will accord greater importance in future to aspects of in-country green procurement, bearing in mind that the settings (product labelling, branded products) in those countries are incomparably more difficult and complex. Training provided for local staff in GTZ Offices and projects will therefore also address environmental criteria in procurement activities. These criteria have already been taken into account in a guideline on the production of environmental audits in GTZ Offices abroad.

## Environmental audit



The environmental team at GTZ-Haus Berlin

### 2.2 Operations in Berlin

This year, as in the past, GTZ-Haus Berlin has a place in the environmental report. Since its establishment GTZ-Haus Berlin has been at pains to minimise the environmental impact of its resource use. Environmental management depends especially upon the numerous events that take place there. In 2005, GTZ-Haus Berlin welcomed more than 15,000 guests. The number and type of events greatly influence the environmental and resource profile of the house, where 77 colleagues worked last year.

***Information and communication:***

A new environmental team formed in autumn 2005 has set itself the principal task of improving internal communication. To that end, a newsletter for GTZ-Haus Berlin titled “DER GRÜNE PUNKT”

was launched, which is distributed to staff in digital form at regular intervals. This tackles a range of environmentally relevant themes and gives tips on how to minimise environmental footprint and save energy. For instance, guidance on proper heating has been distributed, and a “door hanger” has been designed that prompts room users to switch off electrical equipment.

***Mobility:***

Thanks to the central location of GTZ’s operations in Berlin (Potsdamer Platz), many staff use local public transport to get to work. In summer, of course, but also in winter, many staff cycle. Indeed, the number of cyclists has increased, so that an additional bicycle rack had to be procured, of which frequent use is made.

## Environmental audit

### ***Fair trade and procurement:***

Catering for staff and visitors alike uses exclusively coffee, tea and juices from fair trade and organic farming. The flowers used for decoration are also fair trade products.

Care is taken that external service providers for events also use organic and fair trade products. GTZ-Haus Berlin thus not only makes its own small contribution to sustainability, but also and above all strengthens the public perception of GTZ as a company committed to sustainable development.

Detailed recording of the office materials consumed in GTZ-Haus Berlin has continued and has succeeded in further reducing procurement costs slightly. Careful use of materials has become a routine part of everyday operations.

### ***Paper and solid waste:***

GTZ-Haus Berlin has succeeded in slightly reducing the overall quantity of solid waste, as well as the specific quantities of paper waste and glass waste, and the remaining quantity of waste consigned to final disposal. Thirty-nine percent of overall waste is recovered.

Nonetheless, paper consumption per staff member has risen. The rise in paper use for photocopying was relatively slight. It is the general use of paper per staff member that accounts for the bulk of the rise. This quantity increased from approx. 3,300 sheets to approx. 5,600 sheets per staff member per year. This is doubtless due to the larger number of events as compared with previous years. Efforts are in progress, however, to curb the rising levels of paper consumption: More and more publications are no longer printed, but only provided in digital form. Printing costs are thus being decentralised. Despite this the environmental team views reduction of paper consumption as an important starting point for activities in 2006.

In accordance with the paper and procurement standards applied at Head Office, GTZ-Haus Berlin uses only recycled paper.

### ***Water and energy:***

Despite the greater scope of events and higher numbers of visitors, water consumption in GTZ-Haus Berlin has been held at the level of the previous year.

Total energy consumption rose slightly in 2005. Heating energy consumption and electricity consumption developed in opposite directions. Heating energy consumption rose, exerting a

greater impact upon overall energy consumption than the slight drop in electricity consumption.

The increased demand for heating energy is mainly attributable to the harsher winter. The reduction in electricity consumption can be explained as a response to the improved information provided on ways to make environmentally sound use of electrical equipment.

Moreover, the partial introduction of green electricity was implemented last year. It may be possible in the coming year, thanks to changes that have occurred in Berlin's power supplier market, to switch completely to green electricity sources.

## Environmental performance in GTZ's projects and programmes

No substantial changes arose in 2005 in terms of GTZ's environmental performance in its projects and programmes. Nonetheless, this is an important theme, and we therefore recapitulate the text of last year's environmental report here.

Environmental policy is of paramount importance in German Development Cooperation. This applies to all aspects of sustainable development, such as poverty reduction, and also to the commitments arising from international environmental agreements. In 26 countries – including twelve in Latin America, five in Asia and Oceania, five in sub-Saharan Africa and four in North Africa – environmental protection and natural resource conservation is therefore an agreed priority area of promotion in German development cooperation. In other countries, areas such as water, energy and transportation that have close links to the environment have been agreed as priority areas. Further areas such as economic reform also touch upon the environmental theme in cooperation activities. Environmental and resource conservation projects account for up to 25% of the overall volume of German Development Cooperation.

The environmental impacts which GTZ generates by its activities can be both positive and negative. At the outset, when preparing offers to the German Federal Ministry for Economic Cooperation and Development (BMZ), an environmental impact assessment is conducted in order to identify the potential environmental effects associated with a planned project or programme. Each project is classified in a category of environmental relevance in accordance with OECD-compatible criteria.

The ER 2 marker is assigned if a project/programme and its objective are designed above all to foster environmental protection and natural resource conservation.

The ER 1 marker is assigned if a project/programme includes components that help achieve environmental protection and natural resource conservation, and the objective is partly oriented toward this goal.

The ER 0 marker is assigned if a project/programme is not oriented toward ecological sustainability or does not (yet) prescribe specific development-policy targets. ER markers thus relate to the objective of a project or programme and its environmental relevance.

Regardless of whether a project or programme specifically targets environmental protection or natural resource conservation, negative environmental impacts can arise during implementation. If there is such a risk, or if no definite assessment can be made when the proposal is prepared, compensatory or monitoring measures need to be incorporated into the project or programme. There is then a "need for action". If a project involves environmental protection or prevention measures (ER 1 or ER 2), then the presumption is that there is a need for action, as such measures need to be kept under surveillance, for instance within the context of regular project monitoring. Whenever a "need for action" is identified, an environmental attachment must be included with the offer, setting out in further detail the environmental risk or need for clarification as well as appropriate (remedial) measures. The 2004 Environmental Report contains a detailed description of the environmental impact assessment procedure applied by GTZ since 1989.

In the last quarter of 2005, GTZ's environmental officers began to review the application of environmental impact assessment procedures through random checks. The aim is to find out whether the tool is applied correctly and consistently when offers are prepared, and whether identified environmental risks are taken into account as projects or programmes unfold. The outcomes of this analysis are expected to be available in the summer of 2006 and will be integrated into the process of continuous improvement within GTZ.



## Environmental management in GTZ's field structure

4



Separating wastes  
at the GTZ Office  
in Bangkok, Thailand

In 2005 some 1,000 staff members worked at GTZ's Head Office in Eschborn. In addition to these, however, about 9,300 further persons were employed at the 67 GTZ Offices. These are not covered by the present Environmental Report, although operations in GTZ Offices cause environmental impacts, just as work at the Head Office in Eschborn does.

GTZ is, however, making increasing efforts to integrate the field structure within its environmental management. This process is not entirely straightforward, as each Office operates under very different conditions and the inventorisation of environmental data needs to be tailored individually to each site.

Despite the broad range of different settings, the country offices in Quito (Ecuador), Managua (Nicaragua), Lima (Peru) and Santiago de Chile have each carried out an environmental audit in

recent years. Building upon these pilot projects, a guideline for carrying out environmental audits in the field structure has been produced. This was presented to Country Directors in 2005 at the Management Conference with participation by the Office of the Managing Directors. In addition to general information on procedures, required resources and the conducting of environmental audits, the guideline also contains checklists on the theme of "good housekeeping" and template tables which facilitate the collection and calculation of data. This guidance puts the identification of savings potential, for instance in terms of resource consumption, on a systematic basis and is intended, in a first step, to motivate staff to conduct an environmental audit. It is of course also to be hoped that the information gained through data collection is in fact utilised to recognise potential for improvement, formulate targets

## Environmental management in GTZ's field structure

and carry out measures. The improvements achieved could then be reported at regular intervals of about two years.

Benchmarking to compare the environmental performance of the various GTZ Offices does not appear expedient. Each country in which GTZ operates has a very different setting. This makes it impossible to carry out any direct comparison, for instance of energy consumption and resultant CO<sub>2</sub> emissions.

The GTZ Office in Thailand was the first to use the guideline to perform an environmental audit

in 2005. Here the guideline produced good results, particularly in terms of identifying potential for improvement and informing and motivating staff.

In field operations the production of an environmental audit remains voluntary. Six further GTZ Offices (China, India, Pakistan, Indonesia, Bangladesh and Cameroon) and a number of partner organisations have already expressed their interest in producing an environmental audit in 2006.

### 5.1 Focal area 2005: Paper

Saving paper was at the top of the agenda for environmental officers in 2005. Although paper consumption has been reduced continuously since 2000, at 10,222 sheets per staff member the current level is still not satisfactory. To improve the situation, further printers were equipped with duplex units last year, making it possible to print documents on both sides of the paper in one passage. This is just one of the technical options presented in the “paper-saving tips” document, which was updated once more in 2005

in a process involving cooperation between the network of office managers and the environmental officers. The document is accessible to all staff via the Intranet. It further presents a number of functions of the e-mail program and of photocopying and fax machines that are still unknown to many colleagues. This includes, for instance, paperless re-submission, paperfree faxing, paper-saving printer settings, and further functions of MS Word, MS PowerPoint and SAP that can contribute to conserving resources.

### 5.2 Focal area 2006: Energy

In consultation with the facility managers, GTZ's environmental officers have chosen energy and energy efficiency as the annual theme for 2006. The main reason for this decision is the refurbishment of House 1 at the GTZ Head Office in Eschborn, due to be completed in summer 2006. The energy concept implemented here in GTZ's main building will deliver further savings of electrical and heating energy, above all thanks to the more modern building service technologies (heating system, refrigeration and air-conditioning, lighting etc.) and the new façade.

An appraisal is to be performed in 2006 of whether energy efficiency improvements can also be achieved through technical measures in GTZ's other buildings, above all Houses 2 and 3. Furthermore, the improvements implemented in House 1 will be identified and communicated, in order to motivate staff to adopt energy-saving practices in their everyday work.

The 2006 Environmental Report will explore the concrete implementation and results of these measures.

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.

## 6.1 Operations in Eschborn

### 6.1.1 2005 system boundaries

	Number of staff* excluding external personnel	Number of staff* including external personnel
2000	1,187	1,218
2001	1,091	1,122
2002	1,095	1,126
2003	1,156	1,187
2004	1,128	1,156
2005	1,122	1,148

\* according to  
VfU standard

All Head Office employees and project personnel working at Head Office, trainees, interim specialist advisors and external personnel are included. It is assumed that the absence times of Head Office employees on official journeys roughly balance the attendance times of trainees and consultants at Head Office. Trainees and consultants are therefore not taken into account in the number of external personnel.

External personnel are the employees of companies which have rented or make use of rooms at GTZ and are thus taken into account for the water, gas and electricity consumption figures. All staff not based in Eschborn are excluded from the figures.

Building	Net internal (area/m <sup>2</sup> )
House 1	5,413
House 2	12,005
House 3	7,947
House 4	1,250
House 5	400
ABB building	3,867
<b>Total (Houses 1-5 and ABB)</b>	<b>30,882</b>

**Note:** Owing to the refurbishment of House 1, this building was not used in 2005. The floor area reference figure has thus changed from the previous years.

Working days per year: 250

### Characterisation of system boundary:

The 7th environmental audit (5th publication) of GTZ covers the Eschborn location with the above staff, buildings and installations.

### Systemgrenzen

■ 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 Euro-Lloyd travel agency. They include: Head Office employees, field-staff members, GTZ International Services and consultants. These data cannot be broken down by location.

## The numbers

### 6.1.2 List of indicators for operations in Eschborn in 2005

Indicator	Quantity	Reference/boundary
<b>Facilities</b>		
Net internal area per staff member	26.2 m <sup>2</sup> per staff member	Houses 1-5 and ABB (excl. external personnel)
<b>Consumables</b>		
Sanitary paper	not determined	
Paper consumption, total	11,469,087 sheets	Excl. documentation and publications
Paper consumption per staff member and year	10,222 sheets per staff member	Excl. external personnel, excl. documentation and publications, incl. photocopies
Photocopies per staff member and year	3,308 sheets per staff member	All staff members on site (excl. external personnel)
Recycled paper as % of total	99%	Proportion of recycled paper in overall consumption
Number of hazardous substances	19	Incl. building cleaning
<b>Energy<sup>34</sup></b>		
Total energy consumption	7,937,333 kWh	Electricity, oil, gas
Total energy consumption per staff member and year	6,914 kWh per staff member	All staff members on site (incl. external personnel)
Electricity consumption	2,877,327 kWh	Houses 2-5 and ABB (incl. external personnel)
Electricity consumption per staff member and year	2,506 kWh per staff member	All staff members on site (incl. external personnel)
Electricity consumption per unit net internal area and year	98 kWh/m <sup>2</sup>	Houses 2-5 and ABB
Heating energy consumption	5,060,006 kWh	Oil, gas
Heating energy consumption per unit net internal area	172 kWh/m <sup>2</sup>	Houses 1-5 and ABB
Heating energy consumption per staff member and year	4,408 kWh per staff member	All staff members on site (incl. external personnel)
<b>Water &amp; wastewater</b>		
Potable water consumption, total	6,118 m <sup>3</sup>	Town mains water, Houses 2-5, excl. ABB
Non-potable water, total	6,543 m <sup>3</sup>	Well water installation, Houses 2-5, excl. ABB
Potable water consumption per staff member and year	7,667 l per staff member and year	All staff members on site (incl. external personnel)
Potable water consumption per staff member per day	31 l per staff member per day	Assuming 250 working days
Water consumption per staff member and year	15,866 per staff member and year	All staff members on site (incl. external personnel), potable water plus well water
Water consumption per staff member per day	64 l per staff member per day	Assuming 250 working days
<b>Solid waste<sup>35</sup></b>		
Total waste arisings	201 t	Including paper
Total waste arisings per staff member and year	251kg per staff member	All staff members on site (incl. external personnel)
Paper waste	77 t	

<sup>34</sup> Electricity consumption excludes House 1 refurbishment work.

<sup>35</sup> No solid waste or water data were available for the ABB building in 2005. The staff housed in that building were consequently not included in the overall inventories for that period. Consumption arising due to refurbishment work in House 1 is not included either.

## The numbers

### 6.1.2 Continued – List of indicators for operations in Eschborn in 2005

Indicator	Quantity	Reference/boundary
Paper waste per staff member and year	97 kg per staff member	All staff members on site (incl. external personnel)
Wastes remaining for final disposal	43 t	
Wastes remaining for final disposal, per staff member and year	54 kg per staff member	All staff members on site (incl. external personnel)
Recovery ratio	78%	Proportion of total waste arisings
<b>Transport</b>		
Proportion of commuters using local public transport	20%	According to mobility survey (2005)
Jobticket	660 tickets	Number of Jobtickets issued
Official journeys within Germany km	3,573,432 km	
Official journeys within Germany km per staff member	3,185 km per staff member	All staff members on site (excl. external personnel)
Share of rail km (within Germany)	57%	Proportion of total official journeys within Germany
Share of air km (within Germany)	40%	Proportion of total official journeys within Germany
Share of company car km (within Germany)	3%	Proportion of total official journeys within Germany
Official journeys abroad km <sup>36</sup>	46,522,260 km	Only international flights
Official journeys abroad km per staff member	41,464 km per staff member	All staff members on site (excl. external personnel)
<b>Emissions</b>		
CO <sub>2</sub> emissions, energy	1,253 t	Emission factors according to UBA (2004)
CO <sub>2</sub> emissions, commuting	2,043 t	Emission factors according to UBA (2004)
CO <sub>2</sub> emissions, official journeys	7,562 t	Emission factors according to UBA (2004) and Atmosfair (2006)
CO <sub>2</sub> emissions, total	10,858 t	

36 These data include trips booked for GTZ by the Euro-Lloyd travel agency. They include: Head Office employees, field-staff members, GTZ International Services and consultants. These data cannot be broken down by location.

### 6.1.3 Input/output analysis for 2005

Account	Unit	Input	Stock	Account	Unit	Output
<b>1. Land and property</b>						
1.1 Buildings	qty.		5			
1.2 Land area <sup>37</sup>	m <sup>2</sup>		34,703			
■ built-up	m <sup>2</sup>		13,913			
■ landscaped	m <sup>2</sup>		9,985			
■ sealed	m <sup>2</sup>		10,805			

37 The data refer to GTZ Houses 1-5. No data are available at this stage for the ABB building that has been rented and used since May 2004. Due to the refurbishment work House 1 was not used during 2005.

## The numbers

## 6.1.3 Continued – Input/output analysis for 2005

Account	Unit	Input	Stock	Account	Unit	Output
<b>1.3 Floor areas<sup>38</sup></b>						
■ net internal area	m <sup>2</sup>		29.375		m <sup>2</sup>	1.507
■ total floor area	m <sup>2</sup>	133	42.395		m <sup>2</sup>	
■ enclosed volume	m <sup>3</sup>		not determined		m <sup>3</sup>	
<b>2. Systems &amp; facilities</b>						
<b>2.1 Building services systems<sup>39</sup></b>						
■ well system	qty.		1		qty.	
■ heat recovery systems:					qty.	
- water			1			
- air <sup>40</sup>			8			
■ photovoltaics	qty.		1		qty.	
■ solar thermal	qty.		1		qty.	
■ sculleries	qty.		1		qty.	1
■ grease traps	qty.		1		qty.	1
■ petrol traps	qty.		1		qty.	
■ transformers	qty.		8		qty.	
■ low-voltage switchgear <sup>40</sup>	qty.		3		qty.	
■ medium-voltage switchgear <sup>40</sup>	qty.		3		qty.	
■ lifts	qty.		24		qty.	
■ emergency power supply	qty.		3		qty.	2
■ ventilation systems	qty.		49		qty.	11
■ heating systems	qty.		5		qty.	
■ sprinkler systems <sup>40</sup>	qty.		3		qty.	
■ uninterruptible power supply units <sup>40</sup>	qty.		6		qty.	
■ fire alarm systems <sup>40</sup>	qty.		4		qty.	
■ wall hydrants: <sup>40</sup>	qty.				qty.	
- wet			55			
- dry			8			
■ smoke extracts <sup>40</sup>	qty.		13		qty.	
■ water treatment units <sup>40</sup>	qty.		5		qty.	
■ water lifting units <sup>40</sup>	qty.		6		qty.	
■ pressure boosting systems <sup>40</sup>	qty.		2		qty.	

38 The floor area data refer to Houses 1-5 and the ABB building

39 The information listed under building services systems refers to the remainder of House 1 and Houses 2-5.

40 Reported for the first time in 2005

## The numbers

40 Reported for the first time in 2005

### 6.1.3 Continued - Input/output analysis for 2005

Account	Unit	Input	Stock	Account	Unit	Output
■ gas control stations <sup>40</sup>	qty.		1		qty.	
■ fire dampers <sup>40</sup>	qty.		350		qty.	
<b>2.2 Central Electronic Data Processing</b>	qty.	16	120		qty.	0
<b>2.3 Distributed Electronic Data Processing</b>						
■ PCs incl. laptops	qty.	365	1.953		qty.	37
■ printers	qty.	49	1.014		qty.	104
<b>2.4 Photocopiers</b>						
■ GTZ-owned	qty.	0	1		qty.	0
■ rented	qty.		45		qty.	19
<b>2.5 Office equipment</b>	qty.	--	--		qty.	--
<b>2.6 Communications equipment</b>	qty.	10	132		qty.	2
<b>2.7 Kitchen equipment</b>						
■ refrigeration, freezing	qty.	0	1		qty.	1
■ crockery, continuous-belt, pot and glass dishwashing machines	qty.	0	2		qty.	0
■ dishwashers	qty.	0	1		qty.	1
<b>2.8 Electronic household equipment</b>						
■ washing machines	qty.	0	1		qty.	0
■ condensing driers	qty.	0	1		qty.	0
■ dishwashers <sup>40</sup>	qty.		15		qty.	
<b>2.9 Motor vehicles</b>						
■ utility vehicles	qty.	0	1		qty.	1
■ company cars	qty.	2	3		qty.	2
<b>3. Consumables</b>						
<b>3.1 Paper (excl. photocopies, documentation and publications)</b>	sheet	7.757.248				
<b>3.2 Photocopies</b>	sheet	3.711.839				
<b>3.3 Sanitary paper</b>	kg	not determined				
<b>3.4 Cleaning agents</b>	kg	not determined				
<b>3.5 Hazardous substances</b>	qty.	19				



## The numbers

## 6.1.3 Continued – Input/output analysis for 2005

Account	Unit	Input	Stock	Account	Unit	Output
<b>4. Incoming post and goods</b>				<b>4. Outgoing post and goods</b>		
4.1 Incoming post	kg	18,325		4.1. Outgoing post	kg	51,919
4.2 Incoming goods	kg	153,200		4.2. Outgoing goods	kg	5,625
<b>5. Energy</b>				<b>5. Emissions (energy)</b>		
5.1 Heating energy	kWh	5,060,006		5.1. Heating energy	t CO <sub>2</sub>	1,253
5.2 Electricity, total <sup>41</sup>	kWh	2,873,434		5.2. Electricity	t CO <sub>2</sub>	0 <sup>42</sup>
5.3 Photovoltaics	kWh	3,893				
<b>6. Water</b>				<b>6. Wastewater</b>		
6.1 Town mains water	m <sup>3</sup>	6,118				
6.2 Groundwater, recirculated	m <sup>3</sup>	6,543		6. Wastewater, total	m <sup>3</sup>	12,661
<b>7. Solid waste</b>						
				7.1 Paper	t	
				7.1.1 Mixed paper for recovery	t	54.02
				7.1.2 File material for recovery	t	23.10
				7.2 Wastes recovered		
				7.2.1 "Green dot" labelled wastes	t	not determined
				7.2.2 Commercial wastes handled as municipal solid waste	t	42.66
				7.2.3 Green waste	t	not determined
				7.2.4 Kitchen and canteen waste	t	32.64
				7.2.5 Electro-scrap	t	4.49
				7.2.6 Glass waste	t	not determined
				7.3 Hazardous waste, recovered	t	12.0 <sup>43</sup>
				7.4 Hazardous waste, to final disposal	t	0.5 <sup>43</sup>

41 Excl. photovoltaics and refurbishment of House 1

42 100% power procurement from renewable sources

43 Excl. refurbishment of House 1

## The numbers

### 6.1.3 Continued - Input/output analysis for 2005

8. Transport			8. Emissions (transport)		
<b>8.1 Commuter travel (incl. weekend journeys home)<sup>44</sup></b>					
8.1.1 Local public transport	km	2,275,000	8.1.1 Local public transport	t CO <sub>2</sub>	168
8.1.2 Rail	km	2,245,122	8.1.2 Rail	t CO <sub>2</sub>	148
8.1.3 Motor vehicles	km	11,547,561	8.1.3 Motor vehicles	t CO <sub>2</sub>	1,726
8.1.4 Pedestrians/cyclists	km	not determined			
<b>8.2 Official journeys within Germany</b>					
8.2.1 Company cars	km	92,555	8.2.1 Company cars	t CO <sub>2</sub>	22
8.2.2 Privately-owned cars	km	not determined	8.2.2 Privately-owned cars	t CO <sub>2</sub>	not determined
8.2.3 Rail	km	2,053,812	8.2.3 Rail	t CO <sub>2</sub>	136
8.2.4 Air	km	1,472,065	8.2.4 Air	t CO <sub>2</sub>	see 8.4.
<b>8.3 Official journeys abroad<sup>45</sup></b>					
8.3.1 Air	km	46,522,260	8.3.1 Air	t CO <sub>2</sub>	see 8.4.
8.4 Air, total	km	47,949,325	8.4 Air, total	t CO <sub>2</sub>	7,405

44 Calculated on the basis of the 2005 staff survey

45 These data include trips booked for GTZ by the Euro-Lloyd travel agency. They include: Head Office employees, field-staff members, GTZ International Services and consultants. These data cannot be broken down by location.

## 6.2 Operations in Berlin

### 6.2.1 2005 system boundaries

In 2005, the number of staff members at the GTZ Berlin location numbered 77. This figure is made up of 74 persons (employees in Berlin and project personnel), one person at the reception desk and one providing services, and one trainee involved in event management. Consultants commissioned for event management and trainees in other organisational units are not included in the figures.

GTZ-Haus Berlin had the same net internal area in 2005 as it did in 2004: 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 3rd environmental audit carried out by GTZ at its Berlin location covers the office building on site, with the number of staff set out above.

## The numbers

### 6.2.2 List of indicators for operations in Berlin in 2005

Indicator	Quantity	Reference / boundary
<b>Facilities</b>		
Net internal area per staff member	27 m <sup>2</sup>	GTZ-Haus Berlin
<b>Consumables</b>		
Paper consumption	700,000 sheets	Excl. sanitary paper
Paper consumption per staff member and year	5,685 sheets	Excl. sanitary paper
Photocopies per staff member and year	3,453 sheets	All staff members on site
Recycled paper as % of total	100%	Proportion of recycled paper in overall consumption
Number of hazardous substances	not determined	Incl. building cleaning
<b>Energy</b>		
Total energy consumption	779,789 kWh	Electricity, gas
Total energy consumption per staff member and year	10,180 kWh	All staff members on site
Electricity consumption	271,729 kWh	
Electricity consumption per staff member and year	3,547 kWh	All staff members on site
Electricity consumption per unit net internal area and year	131 kWh/m <sup>2</sup>	GTZ-Haus Berlin
Heating energy consumption	508,061 kWh	Gas
Heating energy consumption per unit net internal area	245 kWh/m <sup>2</sup>	GTZ-Haus Berlin
Heating energy consumption per staff member and year	6,633 kWh	All staff members on site
<b>Water &amp; wastewater</b>		
Potable water consumption, total	844 m <sup>3</sup>	Town mains water + sprinkler system
Water consumption per staff member and year	11,018 l	All staff members on site
Water consumption per staff member per day	44.1 l	Assuming 250 working days
<b>Solid waste<sup>46</sup></b>		
Total waste arisings	122,600 l	Incl. paper and glass
Total waste arisings per staff member and year	1,601 l	All staff members on site
Paper waste	30,440 l	
Paper waste per staff member and year	397 l	All staff members on site
Glass waste	17,280 l	
Glass waste per staff member and year	226 l	All staff members on site
Waste remaining for final disposal	74,880 l	Solid municipal waste
Waste remaining for final disposal, per staff member and year	978 l	All staff members on site
Recovery ratio	39%	Proportion of total waste arisings
<b>Transport</b>		
Proportion of commuters using local public transport	65%	According to staff survey
<b>Emissionen</b>		
CO <sub>2</sub> emissions, energy	not determined	
CO <sub>2</sub> emissions, commuting	not determined	
CO <sub>2</sub> emissions, total	not determined	

<sup>46</sup> Can only be recorded in units of volume.

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