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# 5. Management Approach and Performance Indicators

## Environmental

### Environmental: Disclosure on Management Approach

#### Environmental Disclosure on Management Approach GRI EN

#### **5. Management Approach and Performance Indicators / Environmental / Environmental: Disclosure on Management Approach / Environmental Disclosure on Management Approach GRI EN**

##### DISCLOSURE ON MANAGEMENT APPROACH

Provide a concise disclosure on the Management Approach items outlined below with reference to the following Environmental Aspects:

- Materials;
- Energy;
- Water;
- Biodiversity;
- Emissions, Effluents, and Waste;
- Products and Services;
- Compliance;
- Transport; and
- Overall.

IBM has long been committed to environmental protection. IBM established and has maintained a strong worldwide environmental management system (EMS) for over 30 years to identify and effectively manage the potential environmental impact of the company's operations. The EMS is a vital element in IBM's efforts to achieve results consistent with environmental leadership.

IBM's environmental affairs policy provides the strategic framework for the company's environmental management system and environmental affairs objectives. These objectives address areas such as workplace safety, the conservation of energy and other natural resources, environmental protection, and the development and manufacture of environmentally conscious products.

This policy is supported by corporate directives that govern IBM's worldwide operations and are basic to its environmental management programs. These documents cover areas such as pollution prevention, chemical and waste management, energy conservation, environmental evaluation of suppliers, product stewardship, incident prevention and reporting, and environmental impact assessment for real estate transactions.

IBM's EMS and its commitment to leadership in environmental affairs involves IBM employees across all of its business units. The EMS structure and programs are designed to integrate environmental considerations throughout the company's operations.

IBM's corporate environmental affairs staff is responsible for establishing the company's worldwide environmental affairs strategy, the EMS requirements, and for monitoring its implementation. The company's environmental programs are implemented by professionals at manufacturing, development and research sites around the world. Local performance is overseen by environmental staff in IBM's Real Estate Site Operations and major geographic organizations.

Within business units, IBM employees serve as team leaders for environmental affairs. This helps their organizations coordinate with other functions on interrelated activities affecting environmental issues and programs. Further, each of the groups responsible for product design and hardware development have a person assigned who has the responsibility to integrate product stewardship objectives and requirements into the design and development of IBM products and solutions.

IBM executives are responsible for the safety and environmental performance of their organizations. All employees are required by corporate policy and by the company's Business Conduct Guidelines to comply with environmental laws and with IBM's own environmental, health and safety programs. Environmental performance and programs are reviewed by the IBM Board of Directors & Corporate Governance Committee of the IBM Board.

IBM's Environmental Performance Database (EPD) is one of the company's internal measurement and tracking systems. The database measures environmental performance in such areas as water effluents, chemical use and emissions, hazardous and nonhazardous waste management, recycling, energy conservation, greenhouse gas emissions/reductions, environmental expenditures and progress toward meeting product stewardship objectives. The EPD provides the data used in IBM's environmental and corporate responsibility reporting as well as in periodic updates on performance and programs that go to senior management. Business units also make use of the database in analyzing their environmental performance and identifying areas for improvement.

In 1997, IBM became the first major multinational to earn a single global registration to the ISO 14001 environmental management system standard. This single global registration covers IBM's manufacturing, product design, hardware development and chemical-using research operations worldwide. IBM's strong, comprehensive global EMS made it possible to earn this single global ISO 14001 registration.

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**Supporting Documentation:**

Corporate Policy 139 Environmental Affairs Page #: [View](#)

## Environmental Policy

### 5. Management Approach and Performance Indicators / Environmental / Environmental: Disclosure on Management Approach / Environmental Policy

Does International Business Machines have an environmental policy, whether stand alone or integrated into a broader policy statement? Please provide information below and upload the policy and/or indicate website.

Yes			
<input checked="" type="checkbox"/>	Date first issued	Please specify:	1971
<input checked="" type="checkbox"/>	Date last updated	Please specify:	1997
<input type="checkbox"/>	It is part of another policy/code	Please specify:	
<input checked="" type="checkbox"/>	It is regularly updated/subject to periodic review	Please specify:	Annually
<input checked="" type="checkbox"/>	It is binding for all subsidiaries worldwide		
<input type="checkbox"/>	It is approved by the relevant board		
<input checked="" type="checkbox"/>	It is publicly available		
<input checked="" type="checkbox"/>	It applies to the company's own operations		
<input checked="" type="checkbox"/>	It applies to direct environmental impacts/risks of own business activities		
<input checked="" type="checkbox"/>	* It applies to indirect environmental impacts/risks of offered products and services		
<input checked="" type="checkbox"/>	* It covers identification of indirect environmental impacts/risks at the customer level		
<input checked="" type="checkbox"/>	* It covers identification/mapping of key environmental exposures of own activities (indirect, direct) at industry level (e.g. affecting the competitive environment)		
<input checked="" type="checkbox"/>	* It covers regular reporting of environmental issues to executive management and/or board of directors		
<input checked="" type="checkbox"/>	It applies to environmental impacts/risks stemming from suppliers and service providers (e.g. contractors)		
<input checked="" type="checkbox"/>	It applies to other key business partners (e.g. suppliers, non-managed operations, JV partners, etc.)	Please specify:	Joint business ventures where they are 50% or more owned by IBM; where the day-to-day operations are managed by an IBM executive regardless of the percentage of IBM ownership; or where the joint business ventures are operated on IBM-owned property.
<input checked="" type="checkbox"/>	It applies to what percentage of the company's operations by what factor	Please specify:	100% of the company's operations and employees
<input type="checkbox"/>	Policy is in development and will be implemented in how many months	Please specify:	

#### Supporting Documentation:

Corporate Policy 139 Environmental Affairs Page #: [View](#)

#### Additional Comments

IBM's corporate environmental policy is issued by the company's Chief Executive Officer. It is reviewed annually and updated as needed and appropriate. Programs and performance against the objectives of the policy are reviewed annually with the Directors & Corporate Governance Committee of the Board, which is responsible for reviewing and considering the company's position and practices on significant issues of corporate public responsibility, including protection of the environment.

The corporate directives supporting IBM's corporate environmental policy address the environmental impacts and risks stemming from suppliers and service providers (e.g., contractors).

With respect to subsidiaries, the corporate environmental policy is binding for all wholly owned subsidiaries. Subsidiaries/joint ventures that are partially owned are addressed in the bullet on key business partners (e.g., JV partners).

# Environmental Performance Indicators

## Aspect: Materials

### Materials Used GRI EN1

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Materials / Materials Used GRI EN1

Materials used by weight or volume. See Indicator Protocol for guidance on calculation.

	Unit	2007	2006	2005	
Non-renewable materials					<u>C2</u>
Direct materials used					<u>C3</u>

#### C2

Most of our procurement of "materials" is of goods measured in units rather than by weight or volume. Pls see Additional Comments.

#### C3

Most of our procurement of "materials" is of goods measured in units, rather than by weight or volume. Pls see Additional Comments.

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#### Additional Comments

IBM's purchases are typically higher level subassemblies or services – not materials purchased by weight. Therefore, specific measures of weight are not universally available nor part of our procurement metrics. One exception is plastics and our procurement of plastics containing recycled resins. Information on that is provided in the relevant questions "Use of Recycled Input – GRI EN2" and "Mitigate Product Impact GRI EN26."

## Use of Recycled Input GRI EN2

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Materials / Use of Recycled Input GRI EN2

Percentage of materials used that are recycled input materials

	2007	2006	2005	
% of recycled input materials used	10.62	11.74	8.02	<u>C2</u>

**C2**

This response relates to IBM's procurement of plastics with recycled content. Though we also procure paper with recycled content, IBM's recycled materials goal is in the area of recycled content plastic used in our products. Pls see Additional Comments.

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#### **Additional Comments**

In 2007, 35.9% (by weight) of all plastic resins IBM procured through its corporate contracts contained recycled plastic content. The net recycled plastic content represented 10.6% of IBM's total purchases (recycled and virgin plastics) versus IBM's corporate goal of 5%. Annual targets for use of recycled content resins have resulted in corporate-wide consumption of 11.8 million pounds (5.4 million kg) of recycled resins for use in IBM product applications since the inception of this program in 1995. (Note: The amount of recycled plastic incorporated in our products may vary depending on the availability of recycled resins that meet our performance specifications and on the number of products announced that year for which recycled content may be used.)

## Aspect: Energy

### Energy Consumed–Detailed

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Energy Consumed–Detailed

Please provide International Business Machines's electrical and thermal energy purchased (purchased and consumed, i.e., without energy trading) for the part of International Business Machines's operations for which there is a reliable and auditable data acquisition and aggregation system. Please add the scope of this data system in the most reasonable terms (e.g., revenues, employees, etc.). Please comment on the trend in the data.

	Unit of analysis	FY2007	FY2006	FY2005	FY2004	
Electricity consumption	Megawatt hours (MWh)	5,342,735	5,060,858	4,969,664	4,389,785	
Electricity production	Megawatt hours (MWh) generated on–site from own biomass or own waste (residues, black liquor,...)	0	0	0	0	
Thermal energy consumption (heat, steam)	Megawatt hours (MWh)	1,609,723	1,560,671	1,772,836	1,891,979	
Thermal energy production (heat, steam)	Megawatt hours (MWh) generated on–site from own biomass or own waste (residues, black liquor,...)	0	0	0	0	
Data coverage regarding energy consumption (e.g. as % of revenues, employees, etc.)	please specify (revenues, employees, etc.): space in Real Estate Portfolio	% 100	% 100	% 100	% 100	
Explanation and context for trend in data and data coverage:	<p>Over 500 facilities, representing approximately 88% of IBM's global real estate portfolio, directly report electricity and thermal energy consumption to an Enterprise Energy Management System. Electricity use for the remaining 12% of the real estate portfolio is estimated using country level kwh/ft2 factors at the country level times the unreported square footage. Thermal energy consumption is not estimated for the unreported space.</p> <p>Between 2006 and 2007, IBM's electricity use increased as a result of business growth: expanding operations in Asia Pacific and increased energy use in data centers around the globe due to increased internal and client use of IT equipment.</p>					
Does the above data correspond to either the general or specific data requirements as described in the Guidance Notes?	<input type="checkbox"/> General <input checked="" type="checkbox"/> Specific <input type="checkbox"/> Neither	If neither, please specify below the different approaches taken:				
If data coverage above is less than 100%, please provide below the best possible estimates of the company's total energy consumption and specify						

the missing coverage.						
	Unit of analysis	FY2007	FY2006	FY2005	FY2004	
Estimated electricity consumption for the entire corporation (for 100% data coverage)	Megawatt hours (MWh)					
Estimated thermal energy consumption for the entire corporation (for 100% data coverage)	Megawatt hours (MWh)					
Please indicate missing coverage (e.g. operational regions, production, office buildings, etc. and if possible an estimate of missing %)	% of total energy consumption estimated					
Please describe what was added in the estimates (e.g. business units, geographical coverage):						
<input type="checkbox"/> Do not track energy consumption						

**Direct Energy Use GRI EN3**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Direct Energy Use GRI EN3**

Direct energy consumption by primary energy source.

Unit (joules or multiples of joules): Gigajoules	2007	2006	2005	
Biofuels	0	0	0	
Ethanol	0	0	0	
Hydrogen	0	0	0	
Total direct consumption of renewable primary energy	0	0	0	
Coal	0	0	0	
Natural gas	4,596,064	4,937,999	5,371,109	
Fuel distilled from crude oil	879,414	556,259	740,474	
Total direct consumption of non-renewable primary energy	5,475,478	5,494,259	6,111,583	
Total direct consumption of primary energy	5,475,478	5,494,259	6,111,583	

**Indirect Energy Use GRI EN4**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Indirect Energy Use GRI EN4**

**Indirect energy consumption by primary source.**

Unit (joules or multiples of joules):	Gigajoules	2007		2006		2005	
Renewable Indirect Sources	Total used		Corresponding primary energy consumed in its production	Total used	Corresponding primary energy consumed in its production	Total used	Corresponding primary energy consumed in its production
Solar	1,202			183		183	
Wind	219,993			391,697		50,089	
Geothermal	70,108						
Hydro energy	0	0					
Biomass-based intermediate energy	160,662			897		897	
Hydrogen-based intermediate energy	0	0		0	0	0	0
CHP/Wind/Biomass	1,115,557			896,750		377,496	
Solar/Wind	0	0		30,504		44,246	
Non-Renewable Indirect Sources							
Electricity	17,878,580			17,191,340		17,324,810	
Heating and cooling	557,650			237,149		389,070	
Steam	36,508			13,747		51,083	
Nuclear energy							

**Additional Comments**

The indirect energy consumption for renewable indirect sources represent IBM direct purchases of renewable energy and purchases of Renewable Energy Certificates (RECs) from brokers. IBM purchased 96,000 MWH of RECs from wind, geothermal and biomass generation sources in 2007.

IBM’s global electricity purchases are derived from a mix of renewable and non-renewable sources. IBM purchases its electricity directly from the grid as provided by local utilities or by specific contracts where IBM facilities are in deregulated utility jurisdictions. These purchases are a mix of renewable and non-renewable sources. The indirect non-renewable electrical purchases represent the total IBM global electricity purchases minus the direct purchases of electricity generated from renewable sources.

The indirect purchases of heat, cooling, and steam represent locations which purchase these commodities from district energy systems. The use of heat, cooling, and steam are reported in the thermal energy use in other reporting sections. Data from 2005 and 2006 were updated to include these purchases.

IBM does not collect data to identify the portion of its electrical purchases generated at nuclear power facilities.

## Energy Use Reduction

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Energy Use Reduction

Please indicate whether or not International Business Machines has programs and/or targets to reduce energy use. Upload details as appropriate.

<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Corporate energy use</li> <li><input checked="" type="checkbox"/> Fleet energy use</li> <li><input checked="" type="checkbox"/> Product energy use</li> <li><input checked="" type="checkbox"/> Energy use reduction targets</li> <li><input checked="" type="checkbox"/> Other <span style="margin-left: 20px;">Please specify: External Distribution/Logistics</span></li> </ul>	
<p>Specify objectives and expected date of goal attainment:</p> <p>1) Energy Conservation and related carbon dioxide (CO2) emissions reduction goal:          IBM's annual energy conservation goal is to reduce or avoid the equivalent of 3.5% of IBM's actual annual electricity and fuel use by improving energy efficiency in its operations.</p> <p>In 2007, IBM achieved a 3.8% savings in its annual energy use through energy efficiency improvements. See the section "Energy Saved" – GRI EN5 for details of IBM's Energy Conservation accomplishments.</p> <p>Adding the CO2 emissions avoided through its use of renewable energy, IBM achieved a total avoidance of 11.1% in the CO2 emissions associated with its electricity and fuel through energy conservation projects and the use of renewable energy.</p> <p>IBM now has a new CO2 emissions reduction goal. Between 1990 and 2005, IBM reduced or avoided CO2 emissions by an amount equivalent to 40% of its 1990 emissions through its global energy conservation programs. IBM's new goal is to further extend this achievement by reducing CO2 emissions associated with IBM's energy use 12% between 2005 and 2012 through (a) energy conservation, (b) use of renewable energy, and/or (c) funding the equivalent CO2 emissions reduction by the procurement of Renewable Energy Certificates (RECs) or comparable instruments.</p> <p>2) In 2002, IBM became a charter member of the U.S. EPA's Climate Leaders program. In joining, IBM set the following two-part GHG emissions reduction targets associated with energy use and perfluorocompounds (PFC)s:</p> <p>a) Achieve average annual CO2 emissions reductions equivalent to 4% of the emissions associated with the company's worldwide annual electricity and fuel use over the six year period from 2000 through 2005. IBM intends to achieve these reductions through further energy conservation actions.</p> <p>b) Achieve an absolute 10% reduction in PFC emissions from IBM's semiconductor manufacturing processes by 2005, using 2000 as the base year.</p> <p>IBM surpassed both of these goals. At year-end 2005, the company had achieved an average annual CO2 emissions reduction of 6% from 2000 through 2005 versus the 4% goal. This represents an annual average reduction and avoidance of 162,000 metric tons of CO2. On the PFC emissions reduction goal, IBM reduced PFC emissions by 58% compared to the 2000 baseline year versus the 10% goal.</p> <p>In 2007, IBM entered into a second generation Climate Leaders goal:          IBM pledges to reduce total global greenhouse gas (GHG) emissions by 7% from 2005 to 2012.</p> <p>3) IBM has been a member of the U.S. EPA Best Workplaces for Commuter (BWC) Program and has ranked in the program's Top 20 Best Workplaces for Commuters from the Fortune 500 Companies in 2004, 2005 and 2006.</p>	
<p>Please specify any improvements and implemented measures with respect to energy use up to now:</p> <p>IBM has a long history of managing and reducing its energy usage and CO2 emissions. While many companies are just beginning to set their first CO2 emissions reduction goals, IBM's long-standing energy management program has contributed to the reduction of its operational carbon footprint for over three decades, with significant results. For example, from 1990 through 2007, IBM conserved 4.6 billion kWh of electricity and saved \$310 million through energy conservation actions. Electricity and fuel conservation resulted in the avoidance of 3.1 million metric tons of CO2 emissions over that period. This figure represents approximately 45% of IBM's total 1990 CO2 emissions worldwide, a result that stands among the best from global industry.</p> <p>— Fleet Energy Use:          IBM has limited fleet operations and only in certain countries. Where IBM provides leased vehicles for employees, the company works to offer high mileage vehicles. In France and Belgium, with over 2,600 lease vehicles, programs to offer high mileage vehicles have resulted in over 95% of the vehicles emitting 140 gm of CO2/km despite the availability of vehicles with emission levels up to 200 gm of CO2/km. A similar program is being offered in the U.K.</p> <p>— Employee Commuting:          IBM has pioneered employee commutation reduction programs for its employees. Two key elements are our work at home program (in which</p>	

employees' "work" location is their home and they have no IBM office) and our mobile employees program (in which employees work from home a number of days a week). Over 1/3 of IBM's global work force (over 100,000 employees) participates in these programs. IBM also has commutation option programs at many of its locations, providing alternatives such as car or van pooling, mass transit options, facilities for bicyclists and other alternatives that reduce commutation. In the United States alone, we estimate (using U.S. EPA factors) that IBM's work at home program has conserved over 7.75 million gallons of fuel and avoided over 64,000 metric tons of CO2 emissions in 2007. In addition, over 2,000 tons of CO2 emissions were avoided by employees using other commute-choice programs such as carpooling, vanpooling, etc. in 2007.

Globally, many IBM locations provide support for the use of public transit systems, shuttles from locations to mass transit stations and alternate transportation or "loaner" cars for work trips during the work day.

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**Additional Comments**

IBM has focused on taking concrete voluntary actions to address energy use and climate change in its operations, products and services, including:

- Develop and maintain a global GHG management plan and emission inventory resulting from IBM's global operations. The GHG management plan is in conformance with the detailed U.S. EPA criteria that we are required to meet as part of our participation in the U.S. EPA Climate Leaders program;
- Setting a corporate-wide GHG emissions reduction goal;
- Conserving energy (thus reducing indirect emissions of greenhouse gases);
- Increasing IBM's use of renewable energy;
- Reducing IBM's direct emissions of greenhouse gases from manufacturing and facilities processes;
- Designing energy efficient products and developing solutions to help our clients reduce their energy use and improve efficiency; and
- Participating in voluntary climate protection programs with both government and nongovernmental organizations.

## Energy Saved GRI EN5

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Energy Saved GRI EN5

Energy saved due to conservation and efficiency improvements.

Unit (in joules or multiples of joules):	Gigajoules	2007	2006	2005	
Total energy saved		1,039,947	1,000,793	845,426	

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**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Product Energy Saved GRI EN6**

Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives.

<p>Existing initiatives to reduce the energy requirements of major products/product groups or services:                  IBM established its Product Stewardship program in 1991. One of its objectives was to develop, manufacture and market products that are efficient in their use of energy. IBM established product energy efficiency goals based on either meeting ENERGY STAR criteria (when applicable) or on achieving improvements in energy efficiency over previous generation products or models (when ENERGY STAR was not applicable). IBM has been very successful in meeting its product energy efficiency goals. Each new generation of products (when a comparable, earlier generation product was sold) achieved improvements in computing performance per unit of energy ranging from 14% to 73% in 2007.</p> <p>In addition to its ongoing programs and objectives regarding product energy efficiency, IBM has initiated a menu of innovations and integration solutions involving its hardware, software and services business to address the energy efficiency of IT equipment and the data center. IBM has taken important early steps to help its customers manage their data center energy efficiency and continues to innovate to expand on these capabilities. Energy efficiency capabilities for IT equipment and data centers will continue to evolve through the application of existing technologies and the development of new technologies to create new paradigms in IT equipment design, workload management software, and facilities systems and their relationship to the operation of the IT equipment. In May 2007, IBM announced its “Big Green Initiative”. Details are provided on the IBM website: <a href="http://www-03.ibm.com/press/us/en/presskit/21440.wss">http://www-03.ibm.com/press/us/en/presskit/21440.wss</a>. Specific information is provided below.</p> <p>PRODUCTS: IBM has continued to enhance the ability of its hardware products to deliver more computing work per unit of energy utilized. IBM innovations in both hardware and software are critical to driving such product energy improvements. Some examples:</p> <p>Energy Management:</p> <p>Active Energy Manager – a combination hardware/software tool that enables customers to ‘meter’ actual power usage, cap and monitor server power usage, and optimize the power/performance relationship on an individual server. IBM is also working with partners who specialize in data center facilities equipment to integrate IT and facility equipment monitoring and control systems to begin to provide the capability to match the cooling load delivered by the facilities equipment to the heat load generated by the IT equipment.</p> <p>Virtualization – enables server and storage systems to run multiple operating systems and applications. It enables consolidation of workload from multiple servers or storage equipment onto a single piece of equipment to save energy and data center space. Consolidating the workload from many existing computers onto new, high capacity servers with virtualization capabilities can enable data centers to deliver the same amount of computing capability with 20% to 70% of the existing space and power requirements. This can either free up space for additional business process growth or reduce the cost, energy use and associated CO2 emissions of running the current business.</p> <p>Upgrade of Tivoli management software – IBM’s Tivoli management software enables data center energy management across the data center by such actions as data center level power monitoring (using data provided by Active Energy Manager), department level charging for power usage, and automatic idling of inactive systems. Tivoli is also developing power/workload management capabilities that will enable data center operators to begin to optimize workload delivery and power use to maximize the workload delivered for the power used.</p> <p>Energy Technology:</p> <p>Calibrated Vecteded Cooling™ – industry leading advanced systems–power and cooling architecture which intelligently engineers the path of cool air flow through IBM server systems, allowing the use of fewer fans and reducing the power required to cool the rack by up to 66%.</p> <p>Rear Door Heat Exchanger – patented ‘cooling doors’ that utilize chilled water right at the rack to collect up to 55% of the heat generated by computer systems before it reaches the room, and without requiring any additional fans or electricity.</p> <p>Power Supply Efficiency – IBM provides high efficiency power supplies on many of its systems, with conversion efficiencies of &gt;85% over the 40–70% loaded operating range, the typical operating range of redundant power supplies.</p> <p>DATA CENTER POWER MANAGEMENT: The increasing use and importance of I/T solutions in many areas such as in research and in optimizing the day-to-day operations of businesses – and the increasing power demand and density of these ever more powerful I/T systems – have placed a heavy demand on power and cooling systems in</p>				
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<p>data centers. IBM is developing a data center strategy which incorporates and integrates the innovations in hardware, software, services and partnerships. IBM combines its product energy efficiency capabilities along with its innovative tools for modeling data center cooling solutions, its software management capabilities and the integration of the management of all of the data center systems to help its data services groups and clients design and implement data center “ecosystems” that minimize the energy requirements of data centers and maximize the workload delivered. IBM offers a range of services and products to improve the energy efficiency of existing data centers and to design new data centers to incorporate current energy efficiency best practices and state of the art, energy efficient equipment and energy management systems. These services are enabling IBM and its clients to improve their data center operations and reduce their energy usage.</p> <p>IBM Global Technology Services offers a full range of services to assist clients with evaluating, designing, implementing and managing their IT infrastructure and physical environment.</p> <ul style="list-style-type: none"> <li>• Data center thermal assessment – determine the 3D thermal profile of the data center using IBM’s innovative Mobile Monitoring Technology and recommend actions to reduce energy use.</li> <li>• Data Center and Facilities Strategy Services — identify requirements, capabilities and capacities, to define the best “green” and high–resiliency options.</li> <li>• IT Facilities Assessment, Design and Construction Services — create stable, security–rich, future–ready data centers and enterprise command center facilities.</li> <li>• IT Facilities Consolidation and Relocation Services — make optimal investments that deliver availability, scalability, recoverability and agility to transition to next generation data centers.</li> <li>• Specialized Facilities Services — providing the IT and industry knowledge essential for project design and integration relevant to intelligent building and green building construction, as well as factory automation, clean room, trading room and facility management control systems (FMCS).</li> </ul>				
Unit (in joules or multiples of joules):	2007	2006	2005	
Reduction in energy requirements of products and services				
Assumptions about consumptions or normalization factors:				

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Energy / Reduce Indirect Energy GRI EN7**

**Initiatives to reduce indirect energy consumption and reductions achieved.**

<p>Existing initiatives to reduce indirect energy use:  <b>SUBCONTRACTED OPERATIONS:</b>                  In general, we do not estimate the emissions of our suppliers or our external distribution systems. Like many manufacturers, IBM has thousands of suppliers around the world. They are in all types of businesses and very few, if any, work solely for us. The energy mix of the power used by all of these suppliers would vary, and we have not identified a meaningful estimate or apportionment of the energy used by these suppliers that would be associated with the products or services provided to IBM versus that associated with products or services the suppliers provide to other companies/customers. In addition, the business scope with any given supplier remains dynamic as it is driven by business need. Given the complexity of supply chain operations, it is difficult to develop standards allowing for consistent measurement and/or comparison by manufacturers of their suppliers. We work with our supply chain to improve the energy efficiency of the components they build for us. As an example, IBM works with its power supply manufacturers during the design and manufacturing phases to incorporate efficiency into the power supply system and to meet IBM energy efficiency requirements. Product design areas specifically targeted include the components that convert, regulate, and provide the appropriate quantity and quality of power to the equipment. By collaborating with key suppliers, IBM has been able to deliver industry power supply solutions which can achieve conversion efficiencies of greater than 85% in the primary operating range of the power supply.</p> <p>IBM has undertaken two initiatives in 2007/2008 to begin to analyze GHG emissions associated with its supply chain:</p> <p>1) In conjunction with its participation in the Electronics Industry Citizenship Coalition, IBM is participating in a work group to develop a common approach that companies in the electronics industry could use to encourage their suppliers to inventory and reduce their GHG emissions. The group is researching the current level of knowledge on energy use and GHG emissions inventory and management activity in the supply chain, determining what existing industry, government and NGO groups offer an opportunity for collaboration in this area, and developing a common approach to query suppliers on their GHG inventories, provide education on GHG inventory and reduction methodologies, and encourage suppliers to pursue energy and manufacturing efficiencies to reduce their GHG emissions.</p> <p>2) In an effort to better understand the current GHG inventory of its supply chain, IBM is participating in the Carbon Disclosure Project (CDP) Supply Chain Leadership Collaboration (SCLC). Through this collaboration, IBM is querying a selected sample of its suppliers to determine these suppliers' knowledge of their operational energy use and GHG emissions. As we gain a better understanding of the GHG emissions inventory of our key suppliers, we plan to determine the logical next steps to encourage actions by our suppliers that will lead to improved energy and process efficiency and reductions of GHG emissions in their operations.</p> <p><b>LOGISTICS AND DISTRIBUTION:</b>                  IBM has been evaluating ways to make its logistics operations more efficient. IBM is an active participant in the U.S. EPA's SmartWay Transport program, a voluntary partnership between freight carriers and shippers and the U.S. EPA to improve fuel efficiency and reduce GHG emissions. More than 80% (in U.S. dollars) shipped by IBM within the U.S. and from the U.S. to Canada and Mexico is transported by SmartWay partners. IBM has also extended specific SmartWay requirements, such as dock management, truck idling, and contract requirements to its global distribution operations. For its efforts, the U.S. EPA recognized IBM with a 2007 SmartWay Excellence Award.</p> <p>The IBM Global Logistics team has been working on optimizing the logistics operations through several initiatives. Analysis of the warehousing system indicated the opportunity for two consolidation projects which reduced warehouse space by several hundred thousand square feet and optimized product flow. This reduced energy use both for building operation and transportation. Through transportation mode analysis, the Global Logistics team was able to shift approximately 1,500 tons of shipping from air to more efficient ground or ocean transport in 2007 and drive some consolidation of loads to improve the shipping efficiency of the company's products by combining several product shipments onto a single truck. The Global Logistics team is working with other IBM groups to evaluate logistics management models that are being developed to determine their efficacy for use in IBM logistics operations to further improve the group's efficiency and reduce the fuel use and carbon emissions associated with logistics activities.</p> <p>IBM's packaging team continues to identify opportunities to reduce packaging volume. For System x, a more efficient packaging system was developed which utilizes over 95% recycled material, making both the shipping more efficient and making use of existing raw materials. Shipping boxes for components were also redesigned, reducing packaging weights on three component types by over 180 tons. By</p>				
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<p>focusing on the packaging design for both our products and those of our suppliers, we are able to reduce the costs and the CO2 emissions associated with shipping to our customers and within the IBM supply chain.</p> <p><b>EMPLOYEE COMMUTE PROGRAMS:</b>  IBM pioneered and continues to promote programs that reduce employees' commute to work. Two key elements are 1) our work-at-home program, where employees' 'work' office is their home and they have no IBM office, and 2) our mobile employees program, where employees work from home a number of days a week. Over 1/3 of IBM's global work force (over 100,000 employees) participates in these programs. In the United States alone, we estimate (using U.S. EPA factors) that IBM's work-at-home program has conserved approximately 7.75 million gallons of fuel and avoided over approximately 64,000 metric tons of CO2 emissions in 2007. In addition, approximately 2,000 tons of CO2 emissions were avoided in 2007 by employees using other commute-choice programs such as carpooling, vanpooling, etc. last year.</p> <p>Globally, many IBM locations provide support for the use of public transit systems, shuttles from locations to mass transit stations and alternate transportation or "loaner" cars for work trips during the work day.</p> <p><b>BUSINESS TRAVEL:</b>  IBM's businesses require employees to travel by air and other modes of transportation to fulfill client and other business needs. IBM has developed a full suite of IT collaboration tools to enable real time collaboration anywhere (e.g., e-meeting, "sametime" web conferencing capabilities, advanced audio conferencing, video conferencing, "sametime" instant messaging, voice suite, and broadcast suite). These IT capabilities are widely deployed throughout the company and they enable reduction in business travel while fulfilling business needs where feasible. As an example, in 2006 using our "sametime" web conferencing capabilities, we held 217,000 meetings with 1,350,000 participants and 118,330,000 connection minutes. This represented an average of 1,042 meetings with 4,687 participants each business day and peak, concurrent system use of 292 meetings with 1,250 participants. Of these meetings, 16% involved external customers and business partners.</p> <p>Where IBM provides leased vehicles for employees, IBM units in those countries are working with IBM Procurement and suppliers to offer high mileage vehicles. In France and Belgium, with over 2,600 lease vehicles, programs to offer high mileage vehicles have resulted in over 95% of the vehicles emitting 140 gm of CO2/km despite the availability of vehicles with emission levels up to 200 gm of CO2/km. A similar program is being offered in the U.K.</p>				
Unit (in joules or multiples of joules):	2007	2006	2005	
Reduction of indirect energy used in energy-intensive materials				<u>C3</u>
Reduction of indirect energy used in subcontracted production				<u>C4</u>
Reduction of indirect energy used in business-related travel				<u>C5</u>
Reduction of indirect energy used in employee commuting	985,800	988,280	748960	<u>C6</u>
Assumptions and methodologies used to calculate indirect energy use, and indicate source of information: Reduction of indirect energy use for commuters is calculated using EPA formulas for avoided energy use from carpooling and vanpooling and using EPA average commute distance and assumption that work at home employees do not commute 4 out of 5 days each week.				

**C3**

See information in the comment section above.

**C4**

See information in the comment section above.

**C5**

See information in the comment section above.

**C6**

See information in the comment section above.

## Aspect: Water

### Water Consumption

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Water / Water Consumption

Please provide International Business Machines's water consumption for the part of International Business Machines's operations for which there is a reliable and auditable data acquisition and aggregation system. Please add the scope of this data system in the most reasonable terms (e.g., revenues, employees, etc.). Please comment on the trend in the data.

	GRI	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004	
Water consumption	EN8	<input checked="" type="checkbox"/> Cubic meters of water <input type="checkbox"/> metric tonnes of water	12377200	13189600	13057400	13093800	
Share/percentage of rain water usage or recycled water		% of total water consumption	% 13.5	% 12.1	% 11.5	% 14.2	
Data coverage (e.g. as % of revenues, employees, etc.)		please specify (revenues, employees, etc.):	%	%	%	%	<u>C4</u>
Explanation and context for trend in data and data coverage:		Quantitative reduction target: (please indicate year/time frame and reduction target): In 2000, IBM's semiconductor manufacturing operations established an annual water savings goal of 2% of total water usage, based on the water usage of the previous year and measured as an average over a rolling 5-year period. Over the past five years, IBM's semiconductor division has achieved an average annual water savings of 6% versus its goal of 2%.					
Does the above data correspond to either the general or specific data requirements as described in the Guidance Notes?		<input type="checkbox"/> General <input checked="" type="checkbox"/> Specific <input type="checkbox"/> Neither	If neither, please specify below the different approaches taken:				
If data coverage above is less than 100%, please provide best possible estimates of the company's total water consumption and specify the missing coverage							
		Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004	
Estimated total water consumption for the entire corporation (for 100% data coverage)		<input checked="" type="checkbox"/> Cubic meters of water <input type="checkbox"/> Metric tonnes of water	12780700	13604400	14726800	13188100	<u>C11</u>

If coverage of data collected is LESS THAN 100%, please indicate specifically to which area(s) of the company (e.g. operational regions, production, office buildings, etc.) this refers.		Areas of missing coverage					
% of above missing coverage if possible			%	%	%	%	
Total Water consumption estimated in %		% of total water consumption estimated					
Please describe what was added in the estimates (e.g. business units, geographical coverage):		As noted in comment C11, the additional water use reflects that of IBM's owned/managed facilities (both the plants and labs from C2 above and other IBM owned/managed facilities. It does not include space (generally office space) that IBM leases/does not manage.					
<input type="checkbox"/> Do not track water consumption							

**C4**

Please note: Data covers IBM's water consumption at its plants and labs worldwide.

**C11**

Please note: This data covers IBM owned/managed locations. It does not include water use associated with IBM leased/not-managed space.

**Water Withdrawal GRI EN8**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Water / Water Withdrawal GRI EN8**

Total water withdrawal by source.

Report in cubic meters per year (m3/year)	2007	2006	2005	
Surface water, including water from wetlands, rivers, lakes, and oceans				
Ground water				
Rainwater collected directly and stored				
Waste water from another organization				
Municipal water supplies or other water utilities				

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**No Data Provided** because: Not Applicable

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**Additional Comments**

The water used by the vast majority of IBM's locations is municipal water. IBM has therefore not established a metric for water withdrawal by source. Semiconductor manufacturing is the area of IBM's operations that may be considered water intensive, and we therefore established our goal in that area. Please see question GRI EN10 for information on that goal and performance with respect to water reused/recycled and recycled water as a percentage of total water withdrawal.

**Water Sources Affected GRI EN9**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Water / Water Sources Affected GRI EN9**

Water sources significantly affected by withdrawal of water.

Water source name	Withdrawals account for 5% or more of the annual average volume	Recognized by professionals to be particularly sensitive as a rare, threatened, or endangered system or because it supports a particular endangered species of plant or animal	Is a Ramsar-listed wetland or a nationally or internationally proclaimed conservation area	Size of water source (in cubic meters (m3))	Biodiversity value
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**No Data Provided** because: Not Applicable

**Additional Comments**

The vast majority of IBM's water use is municipal water and its use of water does not impact its water sources. IBM therefore has not established a metric for water withdrawal by source.

## Water Reused GRI EN10

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Water / Water Reused GRI EN10

Percentage and total volume of water recycled and reused.

Report in cubic meters (m3)	2007	2006	2005	<u>C1</u>
Total volume of water recycled/reused	1,671	1,600	1,500	<u>C2</u>
Recycled water as a percentage of total water withdrawal	13.5	12.1	11.5	<u>C3</u>

**C1**

NOTE: Data provided is in TCM (thousand cubic meters)

**C2**

This data reflects total volume of water recycled/reused at IBM's manufacturing, development and research sites only.

**C3**

Please note: This metric relates to IBM's water reuse and recycling in manufacturing, development and research operations. It is a percentage of total water use at these locations.

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**Aspect: Biodiversity**

**Biodiverse Land GRI EN11**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Biodiversity / Biodiverse Land GRI EN11**

Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.

Geographic location	Subsurface and/or underground land that may be owned, leased or managed	Position in relation to protected area (in the area, adjacent to, or containing portions of the protected area) and high biodiversity value area outside protected areas	Type of operation (office, manufacturing/production, or extractive)	Size of operational site in km2	Biodiversity value characterized by: 1) the attribute of the protected area and high biodiversity value area outside protected area, and 2) listing of protected status

**No Data Provided** because: Not Applicable

**Additional Comments**

IBM's facilities are not located in or near areas of high biodiversity value. Nevertheless, we have established wildlife habitat programs to enhance habitat at a number of our locations, including corporate headquarters in Armonk, NY. The programs at 6 IBM facilities in the U.S. and Canada have been certified by the Wildlife Habitat Council.

**Impact on Biodiversity GRI EN12**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Biodiversity / Impact on Biodiversity GRI EN12**

Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.

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**No Data Provided** because: Not Applicable

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**Additional Comments**

IBM's operations and products do not have a significant impact on biodiversity.

**Restored Habitats GRI EN13**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Biodiversity / Restored Habitats GRI EN13**

Habitats protected or restored.

Geographic location	Size (in km2 if larger than one km2)	Success of the restoration was/is approved by independent professionals	
Partnerships with 3rd parties to protect or restore habitat areas not listed above Though IBM's operations do not have an adverse impact on biodiversity and habitat, IBM has established wildlife programs to further enhance habitat at a number of its locations. The programs at 6 facilities in the U.S. and Canada, including corporate headquarters in Armonk, NY, have been certified by the Wildlife Habitat Council.			

**Additional Comments**

As noted in the comment above regarding partnerships, this question is not really applicable to IBM as company's operations do not have an adverse impact on biodiversity and habitat. Nevertheless, we have developed programs at some IBM facilities where we further enhance habitats.

**Biodiversity Strategy GRI EN14**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Biodiversity / Biodiversity Strategy GRI EN14**

Strategies, current actions, and future plans for managing impacts on biodiversity.

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**No Data Provided** because: Not Applicable

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**Additional Comments**

IBM's operations do not have a significant impact on biodiversity.

**Endangered Species GRI EN15**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Biodiversity / Endangered Species GRI EN15**

Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.

Habitat affected by operations that include species on the IUCN Red List and on national conservation lists	# of critically endangered species	# of endangered species	# of vulnerable species	# of near threatened species	# of least concern species

**No Data Provided** because: Not Applicable

**Additional Comments**

IBM's operations do not have a significant impact on biodiversity or endangered species.

## Aspect: Emissions, Effluents, and Waste

### Direct GHG–Detailed

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Direct GHG–Detailed

Please provide International Business Machines's direct greenhouse gas emissions (DGHG SCOPE 1) for the part of International Business Machines's operations for which there is a reliable and auditable data acquisition and aggregation system. Please add the scope of this data system in the most reasonable terms (e.g., revenues, employees, etc.). Please comment on the trend in the data.

DGHG SCOPE 1	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004
Direct Greenhouse Gas Emissions	Metric tonnes of CO2 equivalents	579,931	553,610	592,228	567,336
Data Coverage (e.g. as % of revenues, employees, etc.)	please specify (revenues, employees, etc.): owned and leased facilities and manufacturing operations	% 100	% 100	% 100	% 100
Explanation and context for trend in data and data coverage:	Data includes direct CO2 from fuel burning and CO2e from emissions of PFCs, HCFCs, SF6, N2O.  Increases from 2006 to 2007 resulted from a slight increase in CO2 emissions from fuel burning due to increased use of fuel oil in place of natural gas and increases in PFC emissions resulting from increased production at the semiconductor fabricators.				
Does the above data correspond to either the general or specific data requirements as described in the Guidance Notes?	<input type="checkbox"/> General <input checked="" type="checkbox"/> Specific <input type="checkbox"/> Neither	If neither, please specify below the different approaches taken:			
Does your company use the WBCSD GHG Protocol with an approach to reporting boundaries which is in line with the consolidated financial statement?	<input type="radio"/> Yes, we use the WBCSD GHG Protocol taking a "consolidated financial statement" approach <input checked="" type="radio"/> We use the WBCSD GHG Protocol, however using a different approach to the reporting boundaries: <input type="radio"/> No, we use a different protocol: <input type="radio"/> Not known	Please specify different approach to reporting boundaries or different protocol, if applicable:			
If data coverage above is less than 100%, please provide best possible estimates of the company's total DGHG SCOPE 1 consumption and specify missing coverage					
DGHG SCOPE 1	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004
Estimated total DGHG emissions for the entire corporation (for 100% data coverage)	Metric tonnes of CO2 equivalents				

Please indicate missing coverage (e.g. operational regions, production, office buildings, etc. and if possible an estimate of missing percentage)	% of total DGHG estimated					
Please describe what was added in the estimates (e.g. business units, geographical coverage):						
<input type="checkbox"/> Do not track direct GHG emissions						

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Indirect GHG–Detailed**

Please provide International Business Machines's indirect greenhouse gas (GHG) emissions from energy purchases and consumed (scope 2) for the part of International Business Machines's operations for which there is a reliable and auditable data acquisition and aggregation system. Please add the scope of this data system in the most reasonable terms (e.g., revenues, employees, etc.). Please comment on the trend in the data.

IGHG SCOPE 2	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004
Indirect greenhouse gas emissions from energy purchased and consumed (Scope 2)	Metric tons of CO2 equivalents	2,445,791	2,125,110	2,140,978	1,824,019
Data Coverage (e.g. as % of revenue, employees, etc.)	please specify (revenues, employees, etc.): owned and leased facilities	% 100	% 100	% 100	% 100
Explanation and context for trend in data and data coverage:	<p>Electrical use is directly reported for 88% of the square footage owned and leased by IBM for its operations. The electricity use in the remaining 12% is estimated by country, using a kWh/ft2 factor generated from the reported electrical use multiplied times the unreported square footage.</p> <p>CO2 emissions have increased due to increased electrical use resulting from business growth and increased energy use in data centers. IBM continues to execute on energy conservation opportunities in its business operations (see Energy Saved GRI EN6) and purchase renewable energy where it makes business sense.</p>				
Does the above data correspond to either the general or specific data requirements as described in the Guidance Notes?	<input type="checkbox"/> General <input checked="" type="checkbox"/> Specific <input type="checkbox"/> Neither	If neither, please specify below the different approaches taken:			
Does your company use the WBCSD GHG Protocol with an approach to reporting boundaries which is in line with the consolidated financial statement?	<input type="radio"/> Yes, we use the WBCSD GHG Protocol taking a "consolidated financial statement" approach <input checked="" type="radio"/> We use the WBCSD GHG Protocol, however using a different approach to the reporting boundaries: <input type="radio"/> No, we use a different protocol: <input type="radio"/> Not known	Please specify different approach to reporting boundaries or different protocol, if applicable:			
If data coverage above is less than 100%, please provide best possible estimates of the company's total IGHG SCOPE 2 consumption and specify missing coverage					
	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004

Estimated total indirect greenhouse gas emissions from energy purchased and consumed for the entire corporation (for 100% data coverage)	Metric tons of CO2 equivalents					
Please indicate missing coverage (e.g. operational regions, production, office buildings, etc. and if possible an estimate of missing %)	Plus/minus % of total IGHG estimated	+/- %	+/- %	+/- %	+/- %	
Please describe what was added in the estimates (e.g. business units, geographical coverage):						
<input type="checkbox"/> Do not track indirect GHG emissions						

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Direct, Indirect Greenhouse Gas GRI EN16**

**Total direct and indirect greenhouse gas emissions by weight.**

Estimated coverage (%) of total revenue in most recent reporting year	100						<u>C1</u>
Direct and Indirect Greenhouse Gas (GHG) Emissions (in metric tonnes CO2 equivalent)	2007	2006	2005	2004	Target for Year:	See Comment C1 for targets	
CO2 Direct	301,993	294,197	348,248	367,404			
CO2 Ind. Scope 2	2,445,791	2,125,110	2,140,978	1,824,019			
CH4 Direct							
N2O Direct	6,685	6,629	6,456				
HFCs Direct	10,570	14,481	12,704	13,894			<u>C7</u>
PFCs Direct	251,617	228,781	218,816	177,529			
CF6 Direct	9,066	9,585	5,744	8,509			
Subtotal Direct	579,931	553,610	592,228	567,336			
Subtotal Ind. Scope 2	2,445,791	2,125,110	2,140,978	1,824,019			
Total Direct and Indirect GHG Emissions	3,006,271	2,678,720	2,733,206	2,391,355	See C1 Note		
Subtotal Ind. Scope 3 (from G3 EN17 "GHG Scope 3 Emission")							
Total GHG Emissions	3,006,271	2,674,673	2,718,651	2,381,673	See C1 Note		<u>C14</u>
For total GHG emissions, please explain trend and performance against target: IBM has currently met and exceeded its PFC reduction goal and the Chicago Climate Exchange CO2 and PFC emissions reductions goal for 2010.  CO2 emissions associated with energy use increased due to business growth and increased energy use in data centers. IBM continues to execute on energy conservation opportunities in its business operations (see Energy Saved GRI EN6) and to purchase renewable energy where available and it makes business sense.							
Total direct GHG emissions factored against base figure (please specify base figure, e.g., revenue, volume or production, floor space area, etc.)							
GHG emission data is made publicly available (please upload Web address/document)	Yes						
GHG emission data was prepared in accordance with GHG Protocol (indicate scope 1,2, or 3 and explain in Additional Comments)	Yes						
An additional or alternative GHG emission calculation methodology was used (please upload Web address/document and explain in Additional	No						

Comments)						
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**C1**

C1: IBM has set 5 goals regarding direct and indirect greenhouse gas emissions: (1) IBM Energy Conservation Goal: Achieve annual energy conservation savings equal to 3.5% of IBM's total energy use. This goal applies to spaces owned, operated or leased by IBM in support of IBM's operations. (MMBTU and MWH conserved in a given year divided by total energy used in that year according to a cost weighted formula, provided as a percentage of that year's energy use); (2) IBM CO2 Reduction Goal: Reduce CO2 emissions associated with IBM energy use 12% between 2005 and 2012 (units: absolute reduction in tons of CO2 emissions); (3) IBM PFC Reduction Goal: Reduce PFC emissions from semiconductor manufacturing 25% by 2010 against a base year of 1995 (units: absolute reduction in tons of PFC emissions); (4) IBM Climate Leaders Goal: IBM pledges to reduce total global GHG emissions by 7% from 2005 to 2012 (units: absolute reduction in tons of CO2e emissions); and (5) IBM Chicago Climate Exchange (CCX) Commitment: IBM will reduce its CO2 and PFC emissions in North America by 6% by 2010 as measured against the annual average direct and indirect emissions for the period of 1998 to 2001 (units: absolute reduction in tons of CO2e emissions).

**C7**

Please note: 2006 data for HFCs Direct is estimated.

**C14**

The figures in this line item include direct and indirect GHG emissions associated with IBM's operations, including its electricity and fuel use and its semiconductor manufacturing operations.

**Additional Comments**

IBM's operations do not release significant quantities of greenhouse gases (GHG), so the company's greatest potential impact is an indirect one, through the release of CO2 by the utility companies providing the electricity used by IBM. This has helped drive IBM's focus on energy conservation. IBM's energy conservation efforts have benefitted both the environment and the company's bottom line.

IBM does directly release some PFCs from its semiconductor manufacturing operations. Although they are in relatively small amounts in carbon equivalents (when compared to indirect carbon emissions), IBM has had an active program to reduce PFC emissions since the mid-1990s.

All CO2 emissions factors taken from the IPCC Second Assessment. All emissions listed as metric tons of CO2 or metric tons of CO2 equivalent. IBM does not factor its CO2 emissions against production or any other basic metric.

IBM publically reports its GHG emissions in its Corporate Environmental and Responsibility reports.  
<http://www.ibm.com/ibm/environment/annual/>

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Other Indirect Greenhouse Gas GRI EN17**

Other relevant indirect greenhouse gas emissions by weight.

Estimated coverage (%) of total revenue in most recent reporting year	0				
Other Relevant Indirect Greenhouse Gas (GHG) Emissions (in tonnes CO2 equivalent)	2007	2006	2005	2004	<u>C2</u>
CO2 Ind. Scope 3					
CH4 Ind. Scope 3					
N2O Ind. Scope 3					
HFCs Ind. Scope 3					
PFCs Ind. Scope 3					
CF6 Ind. Scope 3					
Total Ind. Scope 3					

**C2**

Please see "Additional Comments" section below.

**Additional Comments**

In general, IBM does not estimate the emissions of its suppliers or external distribution systems. Like many manufacturers, IBM has thousands of suppliers around the world. They are in all types of businesses and very few, if any, work solely for us. The energy mix of the power used by all of these suppliers would vary, and we have not identified a meaningful estimate or apportionment of the energy used by these suppliers that would be associated with the products or services provided to IBM versus that associated with products or services the suppliers provide to other companies/customers. In addition, the business scope with any given supplier remains dynamic as it is driven by business need. Given the complexity of supply chain operations, it is difficult to develop standards allowing for consistent measurement and/or comparison by manufacturers of their suppliers.

IBM continues to enhance its collaboration with suppliers. Two specific initiatives the company undertook in 2007/2008 relating to GHG emissions associated with its supply chain were/are:

1) In conjunction with its participation in the Electronics Industry Citizenship Coalition, IBM is participating in a work group to develop a common approach that companies in the electronics industry could use to encourage their suppliers to inventory and reduce their GHG emissions. The group is researching the current level of knowledge on energy use and GHG emissions inventory and management activity in the supply chain, determining what existing industry, government and NGO groups offer an opportunity for collaboration in this area, and developing a standard approach to query suppliers on their GHG inventories, provide education on GHG inventory and reduction methodologies, and encourage suppliers to pursue energy and manufacturing efficiencies to reduce their GHG emissions; and

2) In an effort to better understand the current GHG inventory of its supply chain, IBM is participating in the Carbon Disclosure Project (CDP) Supply Chain Leadership Collaboration (SCLC). Through this collaboration, IBM is querying a selected sample of its suppliers to determine these suppliers' knowledge of their operational energy use and GHG emissions. As we gain a better understanding of the GHG emissions inventory of our key suppliers, we plan to determine the logical next steps to encourage actions by our suppliers that will lead to improved energy and process efficiency and reductions of GHG emissions in their operations.

## 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Greenhouse Gas Reductions GRI EN18

### Initiatives to reduce greenhouse gas emissions and reductions achieved.

Theme	Description of initiative/activity	Reductions in GHG/CO2 emissions achieved	% Total emissions	Investment in (currency):	Start date of initiative	Duration of initiative (years)
Fuel switching (e.g. investment in 'green electricity')	Please see Additional Comments below.		%			
Research & development in low carbon technologies	Please see Additional Comments below.		%			
Production of low carbon technologies	Please see Additional Comments below.		%			
Generation of renewable energy			%			
Product/service innovation	Please see Additional Comments below.		%			
Carbon capture and storage (sequestration)			%			
Demand-side management (e.g. working with customers)	Please see Additional Comments below.		%			
New business model (e.g. switch from manufacturing to service model)	Please see Additional Comments below.		%			
Breakthrough project – any initiative resulting in >25% reduction in total emissions	Please see Additional Comments below.		%			
Other	Please see Additional Comments below.		%			
Other			%			
Other			%			

#### Additional Comments

IBM's programs to reduce GHG emissions are comprehensive and span our operations, products, and services. To the extent that we intersect with the areas listed above, IBM strives to make a difference. For example IBM "invests" in green electricity development by way of its participation in the World Resources Institute's Green Power Market Development Group. IBM develops low carbon technologies relating to semiconductor manufacturing processes and develops and provides energy efficient products and solutions. Some specific examples follow:

Between 2006 and 2007, IBM's purchase of renewable energy — which included the direct purchases of renewable energy for our own consumption as well as the purchases of Renewable Energy Certificates (RECs) — grew by 24%, increasing from 368,000 MWH to 455,000 MWH and primarily through increased use in the U.K., Netherlands and Australia. These purchases represented 8.5% of IBM's 2007 global electricity use.

IBM established its Product Stewardship program in 1991. One of its objectives was to develop, manufacture and market products that are efficient in their use of energy. IBM established product energy efficiency goals based on either meeting U.S. EPA ENERGY STAR criteria (when applicable) or on achieving improvements in energy efficiency over previous generation products or models (when ENERGY STAR was not applicable). IBM has been very successful in meeting its product energy efficiency goals.

In addition to its ongoing programs and objectives regarding product energy efficiency, IBM has initiated a menu of innovations and integration

solutions involving its hardware, software and services business to help address the energy efficiency of IT equipment and data centers. IBM has taken important early steps to help its customers manage their data center energy efficiency and continues to innovate to expand on these capabilities. Energy efficiency capabilities for IT equipment and data centers will continue to evolve through the application of existing technologies and the development of new technologies to create new paradigms with respect to IT equipment design, workload management software, and facilities systems and their relationship to the operation of the IT equipment. In May 2007, IBM announced its "Big Green Initiative." Details are provided on the IBM website: <http://www-03.ibm.com/press/us/en/presskit/21440.wss>. In addition, IBM offers solutions in areas ranging from traffic management, intelligent utility networks/management, energy efficient materials, computer modeling and simulation in climate research and water management, to name a few. Specific information is provided below.

**IBM PRODUCTS:** IBM has continued to enhance the ability of its hardware products to deliver more computing work per unit of energy utilized. Each new generation of products achieved improvements in computing performance per unit of energy ranging from 14% to 73% in 2007. IBM innovations in both hardware and software are critical to driving such product energy improvements. Some examples:

#### Energy Management:

**Active Energy Manager** – a combination hardware/software tool that enables customers to 'meter' actual power usage, cap and monitor server power usage, and optimize the power/performance relationship on an individual server. IBM is also working with partners who specialize in data center facilities equipment to integrate IT and facility equipment monitoring and control systems to begin to provide the capability to match the cooling load delivered by the facilities equipment to the heat load generated by the IT equipment.

**Virtualization** – enables server and storage systems to run multiple operating systems and applications. It enables consolidation of workload from multiple servers or storage equipment onto a single piece of equipment to saving energy and data center space. Consolidating the workload from many existing computers onto new, high capacity servers with virtualization capabilities can enable data centers to deliver the same amount of computing capability with 20% to 70% of the existing space and power requirements. This can either free up space for additional business process growth or reduce the cost, energy use and associated CO2 emissions of running their current business.

**Upgrade of Tivoli management software** – IBM's Tivoli management software enables data center energy management across the data center by such actions as data center level power monitoring (using data provided by Active Energy Manager), department level charging for power usage, and automatic idling of inactive systems. Tivoli is also developing power/workload management capabilities that will enable data center operators to begin to optimize workload delivery and power use to maximize the workload delivered for the power used.

#### Energy Technology:

**Calibrated Vectored Cooling™** – industry leading advanced systems–power and cooling architecture which intelligently engineers the path of cool air flow through IBM server systems, allowing the use of fewer fans and reducing the power required to cool the rack by up to 66%.

**Rear Door Heat Exchanger** – patented 'cooling doors' that utilize chilled water right at the rack to collect up to 55% of the heat generated by computer systems before it reaches the room, and without requiring any additional fans or electricity.

**Power Supply Efficiency** – IBM provides high efficiency power supplies on many of its systems, with conversion efficiencies of >85% over the 40–70% loaded operating range, the typical operating range of redundant power supplies.

**DATA CENTER POWER MANAGEMENT:** The increasing use and importance of I/T solutions in many areas such as in research and in optimizing the day to day operations of businesses – and the increasing power demand and density of these ever more powerful I/T systems – have placed a heavy demand on power and cooling systems in datacenters. IBM is developing a data center strategy which incorporates and integrates the innovations in hardware, software, services and partnerships. IBM combines its product energy efficiency capabilities along with its innovative tools for modeling datacenter cooling solutions, its software management capabilities and its integration of the management of all of the data center systems to help its data services groups and clients design and implement data center "ecosystems" that minimize the energy requirements of data centers and maximize the workload delivered. IBM offers a range of services and products to improve the energy efficiency of existing data centers and to design new data centers to incorporate current energy efficiency best practices and state of the art, energy efficient equipment and energy management systems. These services are enabling IBM and its clients to improve their data center operations and reduce their energy usage.

**DATA CENTER SERVICES:** IBM Global Technology Services offers a full range of services to assist clients with evaluating, designing, implementing and managing their IT infrastructure and physical environment. These include:

- Data center thermal assessment – determine the 3D thermal profile of the data center using IBM's innovative Mobile Monitoring Technology and recommend actions to reduce energy use;
- Data Center and Facilities Strategy Services —identify requirements, capabilities and capacities, to define clients' best "green" and high–resiliency options;
- IT Facilities Assessment, Design and Construction Services —create stable, security–rich, future–ready data centers and enterprise command center facilities;
- IT Facilities Consolidation and Relocation Services —make optimal investments that deliver availability, scalability, recoverability and agility to transition to next generation data centers; and
- Specialized Facilities Services — providing the IT and industry knowledge essential for project design and integration relevant to intelligent building and green building construction, as well as factory automation, clean room, trading room and facility management control systems (FMCS)

**TRAFFIC MANAGEMENT:** IBM is applying its research and IT expertise to solve environmental challenges through the application of IT hardware and software. IBM is applying IT and super computing capabilities to the intelligent energy grid, smart transportation systems, biofuel development, energy and material use optimization in manufacturing processes, logistics planning, and other applications. For example, IBM's Business Consulting Services was the lead contractor on a project which integrated radio frequency identification (RFID), character recognition and data management software into a real–time traffic management system for the city of Stockholm. The system identifies when vehicles enter and leave Stockholm and charge a toll based on the time(s) in which the vehicles were in the city center. In the first month of its seven month trial, the system reduced rush

hour traffic by 100,000 vehicles, reduced congestion by 25% and incited 40,000 people to use mass transit – improving people’s quality of life as well as the environment. The system has now been formally adopted and implemented in Stockholm, and similar IBM congestion pricing solutions are being piloted or implemented in a number of other cities.

**UTILITY SYSTEMS:** IBM is offering a software management system, the Intelligent Utility Network or IUN, to assist utilities in monitoring and controlling their power distribution systems and ultimately enabling demand management by the utility and its customer and the capability for better management and integration of distributed generation into the power grid. IUN is an information architecture and infrastructure that enables the continuous automated monitoring of a utility’s assets and operations as well as customer electricity usage, and uses this "on demand" information to improve service, reliability and efficiency. This includes a combination of "smart" technologies and analytics, which connect and facilitate information flows and remote monitoring and control among utility equipment installed in the field and computers in central offices, providing real-time access to operations and business data. Characteristics of a utility operating in an IUN environment include:

- More automation in monitoring and control of the power usage and the electric grid,
- Greater integration of the grid to create an end-to-end system from the utility to the home, and from the home back to the utility, and
- Greater responsiveness to changing market conditions and regulatory compliance.

Implementation of IUN systems on the utility grid can transform the generation, delivery and management of electricity systems.

**RESEARCH CAPABILITIES:** IBM’s research capabilities are being directed at energy related issues through its “Alternative Energy Research Program”. In addition to the computational innovations discussed in the previous paragraph, IBM is applying its materials expertise to developing innovations in photovoltaic materials and processes and its expertise in nano-science engineering to the challenges of developing highly efficient, low energy membranes for batteries, water filtration and other applications.

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Ozone-Depleting Emissions GRI EN19**

Emissions of ozone-depleting substances by weight.

	2007		2006		2005		2004		
Ozone-depleting substances	Emitted (in tonnes)	Emitted (in tonnes CFC-11 equivalent)	Emitted (in tonnes)	Emitted (in tonnes CFC-11 equivalent)	Emitted (in tonnes)	Emitted (in tonnes CFC-11 equivalent)	Emitted (in tonnes)	Emitted (in tonnes CFC-11 equivalent)	<u>C2</u>
Annex A – Group I Chlorofluorocarbons: CFC-11, CFC-12, CFC-113, CFC-114 and CFC-115	2.9	2.9	3	3	2.5	2.5	5.5	5.5	
Annex A – Group II Halons: halon 1211, halon 1301 and halon 2402	0	0	0	0	0	0	0	0	
Annex B – Group I Other fully halogenated CFCs: CFC-13, CFC-111, CFC-112, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, CFC-217	0	0	0	0	0	0	0	0	
Annex B – Group II Carbon Tetrachloride	0	0	0	0	0	0	0	0	
Annex B – Group III 1,1,1-trichloroethane (methyl chloroform)	0	0	0	0	0	0	0	0	
Annex C – Group I HCFCs	6.7	.3	9.7	.4	8.3	.3	9.4	.4	
Annex C – Group II HBFCs	0	0	0	0	0	0	0	0	
Annex E Methyl Bromide	0	0	0	0	0	0	0	0	
Total ozone-depleting emissions	9.7	3.3	12.6	3.4	10.8	2.8	14.9	5.9	<u>C11</u>
Estimated data 100 coverage (%) for most recent reporting year									
Target for most recent reporting year There are no targets for ODS emissions. Currently, the only use is in chiller systems. Please see Additional Comments below.									

Please explain trend and achievement against target: There are no identifiable trends. Emissions occur due to fugitive emissions or system failures of chillers.										
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**C2**

Please see Additional Comments below.

**C11**

Please see Additional Comments below.

**Additional Comments**

IBM eliminated the ozone-depleting substances (ODSs) banned under the Montreal Protocol from its processes and products back in 1993. We therefore have no routine emissions of these ODSs. The only emissions of ODSs may be the leakage from refrigeration equipment and chillers that is inherent in their operation.

**NOx, SOx & Other Air Emissions GRI EN20**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / NOx, SOx & Other Air Emissions GRI EN20**

NOx, SOx, and other significant air emissions by type and weight.

% of company covered by this data: 100						
Unit (in kilograms or in multiples such as tonnes): Metric tons	2007	2006	2005	2004	Target (year):	
SOx emissions	89.5	72.9	93.1	78.8		
SOx emissions factored against a base figure (e.g. turnover, staff, production volume, etc.)						
Specify the base factor:						
NOx emissions	260.6	243.9	287.3	262.6		
NOx emissions factored against a base figure (e.g. turnover, staff, production volume, etc.)						
Specify the base factor:						
Particulate matter emissions	28.5	28.0	33.1	31.0		
Persistent organic pollutant (POP) emissions						
Volatile organic compound emissions	46.9	62.8	63.7	80.2		
	Target for 2007 VOC: Please see Additional Comments below.	Please explain VOC trend against 2007 target: Please see Additional Comments below.				
Hazardous air pollutant emissions						
Stack and fugitive emissions						

**Additional Comments**

All emissions are reported in metric tons.

The emissions data is provided from IBM manufacturing, research, and development sites. These locations represent 80%–90% of the fuel usage for IBM’s global operations. There is limited direct burning of fuel at IBM office and warehousing facilities worldwide. IBM’s semiconductor operations have limited hazardous air pollutant emissions and they are at "de minimus" levels. For VOCs and potentially hazardous chemicals, abatement systems are in place. IBM establishes baseline emissions criteria for its operations that are applicable globally. These requirements have been in place since 1991. Where feasible, IBM provides abatement technologies beyond regulatory requirements to minimize emissions. These systems are in addition to source reduction efforts.

**Air Emission Reduction**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Air Emission Reduction**

Does International Business Machines have targets and programs in place to reduce air emissions? If so, please check all that apply below and describe the programs. Upload any relevant details.

<input checked="" type="checkbox"/> Corporate-wide program with targets and measuring plan <input type="checkbox"/> Involves management incentives <input checked="" type="checkbox"/> Includes employee training	
Description of program(s) to reduce air emissions: IBM's operations do not place the company in a category of significant air polluters. Nevertheless, the company has long maintained a strong focus on reducing air emissions. IBM's Air Program corporate directive calls for the control and monitoring of boiler emissions, VOCs, global warming gases and potentially hazardous chemical emissions.  As part of its Pollution Prevention Program, IBM strives to reduce its process emissions by source reduction, replacement with environmentally preferable alternatives, and improved abatement technologies. With regard to boiler emissions, IBM's corporate directive prescribes the installation of low NOx burners and prohibits the use of fuel with sulfur content exceeding 0.5%. With regard to VOCs and potentially hazardous chemicals, abatement systems are in place. IBM establishes baseline emissions criteria for its operations that are applicable globally. These requirements have been in place since 1991. Where feasible, IBM provides abatement technologies beyond regulatory requirements to minimize emissions. These systems are in addition to source reduction efforts.  Process air emissions are tracked globally as defined by the U.S. Toxic Release Inventory metric. Please see "Additional Comments" below for IBM's air emissions data.	

**Additional Comments**

As noted above, IBM tracks its process air emissions globally using the U.S. Toxic Release Inventory definition/metric. The data for Air Point Source and Air Fugitive Emissions are as follows (in metric tons/year).

2007: 13.1 metric tons (MT/year)  
2006: 18.6 MT/year  
2005: 19.2 MT/year  
2004: 23.0 MT/year  
2003: 27.7 MT/year  
2002: 55.8 MT/year

**Waste Generation**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Waste Generation**

Please provide International Business Machines's total waste generation for the part of International Business Machines's operations for which there is a reliable and auditable data acquisition and aggregation system. Please add the scope of this data system in the most reasonable terms (e.g., revenues, employees, etc.). Please comment on the trend in the data.

	GRI	Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004	
Total dry waste generated	EN22	Metric tonnes of waste	61284	97904	70637	103446	
Data Coverage (e.g. as % of revenues, employees, etc.)		please specify (revenues, employees, etc.): 100	% 100	% 100	% 100	% 100	
Share of valuable materials separated and recycled		in % of total waste	% 97	% 95	% 94	% 94	
Explanation and context for trend in data and data coverage:		Quantitative reduction target (please indicate year/time frame and reduction target): IBM has specific numeric targets to promote waste reduction and recycling in IBM's operations. They are provided in "Additional Comments" below.					
Does the above data correspond to either the general or specific data requirements as described in the Guidance Notes?		<input type="checkbox"/> General <input checked="" type="checkbox"/> Specific <input type="checkbox"/> Neither	If neither, please specify below the different approaches taken:				
If data coverage above is less than 100%, please provide below best possible estimates of the company's total dry waste generated and specify the missing coverage							
Coverage		Unit of Numbers/Dimension	FY2007	FY2006	FY2005	FY2004	
Estimated total dry waste generated for the entire corporation (for 100% data coverage)		Metric tonnes of waste	61284	97904	70637	103446	
If coverage of data collected is LESS THAN 100%,		Areas of missing coverage					

please indicate specifically which area of the company (e.g. operational regions, units, etc.) this refers to.							
% of above missing coverage if possible			%	%	%	%	
Total Waste consumption estimated in %		% of total waste consumption estimated	100	100	100	100	
Please describe what was added in the estimates (e.g. business units, geographical coverage):		Nothing was added – the data is the same as the actual data above. IBM has specific targets for waste reduction and recycling. We do not monitor our waste as "wet" versus "dry" – we track it under the categories of Hazardous Waste and Nonhazardous Waste (which includes special waste streams). For our response to the categorization in this question, the following waste streams were categorized as "Dry Waste": Cardboard, Paper, Glass, Nonprecious Metals, Precious Metals, Plastics, Wood, Construction Debris, Furniture, Containers, Media Tape, Batteries, End-of-Life IT Electric and Electronic Equipment, and Toner/Ink Cartridges.					
			<input type="radio"/> No data collected	<input type="radio"/> No data collected	<input type="radio"/> No data collected	<input type="radio"/> No data collected	
<input type="checkbox"/> Do not track waste generation							

**Additional Comments**

IBM has specific numeric targets to promote waste reduction and recycling in IBM's operations. They are:

- o Hazardous Waste: Achieve year-to-year reduction in hazardous waste generation from IBM's manufacturing processes indexed to output.
- o Nonhazardous Waste: Send an average of 75% of the nonhazardous waste generated at locations managed by IBM to be recycled.
- o Product Recovery & Recycling/Product End-of-Life Management Landfill and Incineration Use Minimization: Utilize reuse and recycling processes and management controls to minimize the environmental impact of IT end-of-life products. Reuse or recycle end-of-life products such that the amount of product waste sent by IBM to landfills or to incineration for treatment does not exceed a combined 3% of the total amount processed.

**Water Discharge GRI EN21**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Water Discharge GRI EN21**

Total water discharge by quality and destination.

	2007		2006		2005	
	Planned and unplanned water discharges	Volume of effluents or process water in discharges (if applicable) – please indicate parameters used:	Planned and unplanned water discharges	Volume of effluents or process water in discharges (if applicable) – please indicate parameters used:	Planned and unplanned water discharges	Volume of effluents or process water in discharges (if applicable) – please indicate parameters used:
Destination:						
Destination:						
Destination:						
Treatment method:						
Treatment method:						
Treatment method:						
Water discharge reused by another organization						

**No Data Provided** because: Other

**Additional Comments**

IBM does not report water discharges by location in its consolidated, corporate-wide reporting. However, IBM's wastewater is treated prior to discharge and the company's water discharge program for its sites includes a corporate directive with discharge limits for over 20 parameters. These parameters are equal to or more stringent than those prescribed by regulatory permits.

**Total Waste GRI EN22**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Total Waste GRI EN22**

Total weight of waste by type and disposal method.

Unit: MT						
% of operations covered: 100						
How the method of disposal was determined: Direct reporting from worldwide operations						
Waste by method of disposal						<u>C4</u>
2007	Hazardous	Non-hazardous	Total	Target for 2007		<u>C5</u>
Composting	0	0	0			
Reuse	1656.60	0	1656.60			
Recycling	2905.93	84094.90	87000.83			
Recovery	61.61	0	61.61			
Incineration	570.22	2330.05	2870.27			
Incineration for energy recovery	152.67	0	152.67			
Landfill	4720.06	16052.65	20772.71			
Deep well injection	0	0	0			
On-site storage	3.12	0.05	3.17			
2007 Total	12058.56	107860.42		Target for HAZARDOUS waste:	Achieve year-to-year reduction in hazardous waste generation from IBM's manufacturing processes indexed to production.	Explain trend (considering data below) and performance against target for HAZARDOUS waste In 2007, IBM's hazardous waste generation decreased 13% compared to 2006. Indexed to output, performance for the past 4 years follows: 33% reduction in 2004; 19%

					reduction in 2005; an 8% reduction in 2006 and an 8% reduction in 2007.	
2007 Total waste generated			119918.98	Target for total waste: Not Applicable	Explain trend (considering data below) and performance against target for total waste	
2006	Hazardous	Non-hazardous	Total	Target for 2006		<u>C20</u>
Composting	–	–	–			
Reuse	1,618.73		1,618.73	See C5		
Recycling	2,395.06	101,516.46	103,911.52			
Recovery	446.43		446.43			
Incineration	805.09	2,876.41	3,681.50			
Incineration for energy recovery	458.62		458.62			
Landfill	2,883.58	21,977.81	25,303.38			
Deep well injection	–	–	–			
On-site storage	2.59	226.72	229.31			
Other Treatments	2,016.18	7,815.70	9,831.88			
2006 Total	10,631.38	134,413.10		Target for HAZARDOUS waste: See C5 above	Explain trend (considering data below) and performance against target for HAZARDOUS waste See all four years' results against goal in the 2007 response above.	<u>C32</u>
2006 Total waste generated			132,419.16	Target for total waste: N/A	Explain trend (considering data below) and performance against target for total waste Our targets relate to hazardous and nonhazardous waste separately – not combined.	<u>C33</u>

2005	Hazardous	Non-hazardous	Total			<u>C35</u>
Composting	–	875.93	875.93			
Reuse	–	6,770.64	6,770.64			
Recycling	942.62	69,967.92	70,910.54			
Recovery	1,499.30	1,284.81	2,784.11			
Incineration	710.83	1,510.22	2,221.05			
Incineration for energy recovery	2.19	3,855.11	3,857.30			
Landfill	4,113.98	18,856.24	22,970.22			
Deep well injection	–	–	–			
On-site storage	8.93	196.03	204.96			
Other Treatments	5,214.49	5,530.18	10,744.67			
2005 Total	12,492.34	108,847.08	121,339.42			<u>C47</u>
2004	Hazardous	Non-hazardous	Total			<u>C49</u>
Composting	–	–	–			
Reuse	663.87	–	663.87			
Recycling	2,307.84	107,472.68	109,780.52			
Recovery	953.24		953.24			
Incineration	716.37	2,302.58	3,018.95			
Incineration for energy recovery	84.69	1,446.96	1,531.65			
Landfill	2,697.94	22,072.88	24,770.82			
Deep well injection	–	–	–			
On-site storage	–	0.78	0.78			
Other Treatments	5,669.78	3,298.88	8,968.66			
2004 Total	13,093.73	136,594.76	149,386.49			<u>C61</u>

**C4**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM-generated Product End-of-Life Management (PELM) waste.

**C5**

Please see Additional Comments below for IBM's current goals for these areas.

**C20**

IBM has established specific numeric targets to promote waste reduction and recycling of IBM's operations. The goals for 2006: Hazardous Waste: – Achieve continuous year-to-year improvement in the reduction of hazardous waste generation from IBM's manufacturing processes indexed to output. Nonhazardous Waste: – Recycling of 67% of all nonhazardous waste generated from IBM operations in locations owned or operated by IBM; Product recovery and recycling/PELM Landfill Use Minimization: – Maintaining a worldwide IBM PELM landfill use rate at 3% or less.

**C32**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

**C33**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

**C35**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

**C47**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

**C49**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

**C61**

Note: Waste volumes for Hazardous and Nonhazardous categories include IBM generated Product End-of-Life Management waste.

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#### **Additional Comments**

IBM's current nonhazardous waste goal is to send an average of 75% of the nonhazardous waste generated at locations managed by IBM to be recycled. Nonhazardous waste includes such waste as paper, metals, plastics, deionized resins, and nonhazardous chemicals. The metric also includes IT waste generated by IBM's business, e.g., equipment scrapped from IBM locations as well as IBM-owned equipment returned by external customers at the end-of-lease. In 2007, IBM recycled 79.5% of its nonhazardous waste, with 52% of the locations achieving or exceeding the 75% recycling goal.

(Recycling in the context of this metric includes: Composting, Reuse, Recycling, Recovery, and Incineration with Energy Recovery.)

## Water Pollution

### **5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Water Pollution**

Please provide a description of the measures International Business Machines is taking to minimize or reduce water pollution. This may be uploaded and/or described in the box below.

IBM's water discharge program established discharge limits for over 20 parameters which are equally or more stringent than prescribed by regulatory permits. All wastewater treatment plants located on IBM property and/or operated by IBM and processing industrial and/or sanitary wastewater adhere to this specification.

Driven by IBM's objective to continually reduce its Toxic Release Inventory (TRI) releases, IBM's East Fishkill location built a new ammonia treatment plant to further reduce nitrate discharges from this facility whose operations have been expanding. The ammonia treatment facility removes ammonia that was previously discharged into the site's industrial wastewater and biochemically converted to nitrate. Though not required by regulations, IBM voluntarily built the new treatment plant to capture and treat nitrates. IBM East Fishkill received a 2007 Environmental Excellence Award from New York State Department of Environmental Conservation (NYSDEC) for the ammonia treatment facility's use of distillation for nitrate discharge reduction. In 2007, approximately two million pounds of nitrate were removed.

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**Significant Spills GRI EN23**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Significant Spills GRI EN23**

Total number and volume of significant spills.

	2007		2006			2005		2004		
Volume unit:	Total number	Total volume	Total number	Total volume		Total number	Total volume	Total number	Total volume	
Recorded significant spills	0	0	0	0		0	0	0	0	
Spills reported in the recent annual financial statement			Location of spill	Volume of spill	Spill material	Impact of spill				
					<input type="radio"/> Oil <input type="radio"/> Fuel <input type="radio"/> Wastes <input type="radio"/> Chemicals <input type="radio"/> Other					
					<input type="radio"/> Oil <input type="radio"/> Fuel <input type="radio"/> Wastes <input type="radio"/> Chemicals <input type="radio"/> Other					
					<input type="radio"/> Oil <input type="radio"/> Fuel <input type="radio"/> Wastes <input type="radio"/> Chemicals <input type="radio"/> Other					
					<input type="radio"/> Oil <input type="radio"/> Fuel <input type="radio"/> Wastes <input type="radio"/> Chemicals <input type="radio"/> Other					
					<input type="radio"/> Oil <input type="radio"/> Fuel <input type="radio"/> Wastes <input type="radio"/> Chemicals <input type="radio"/> Other					

**Additional Comments**

IBM sites around the world report environmental incidents and accidental releases to IBM management through the company's Environmental Incident Reporting System (EIRS). Every event meeting IBM's environmental incident reporting criteria, which equals or surpasses legal reporting

requirements and include releases to secondary containment, must be reported through EIRS. Each IBM location must have an incident prevention program (including provisions for preventing environmental incidents or their recurrence) and reporting procedure. Root cause is investigated for all releases and corrective action taken as appropriate. None of the releases in 2004, 2005 or 2006 caused significant environmental impact.

**Hazardous Waste GRI EN24**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Hazardous Waste GRI EN24**

Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.

Unit: Metric Tons	2007	2006	2005	
Total weight of hazardous weight transported	12,055.44	10,628.79	12,483.41	
Total weight of imported hazardous waste	38.17	0.0	42.8	
Total weight of exported hazardous waste	5,743.97	4,105.34	5,442.72	
Total weight of treated hazardous waste	12,058.56	10,631.38	12,492.34	
Percentage of transported waste shipped internationally: 49.13				

**Additional Comments**

Export/Import is taken as those exports and imports from and to the United States only.

Shipping Countries: U.S., Canada, Cyprus, Portugal, Spain, U.K.

Receiving countries: France, Germany, U.S., Canada

**Hazardous Waste Reduction**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Hazardous Waste Reduction**

Does International Business Machines have targets and programs in place to reduce hazardous waste production or increase recycling of hazardous waste? Please complete the following and include explanations in Additional Comments.

	Corporate-wide program with targets and measuring plan	Involves management incentives	Includes employee training	
Hazardous waste minimization programs	<input checked="" type="radio"/> yes <input type="radio"/> no	<input checked="" type="radio"/> yes <input type="radio"/> no	<input checked="" type="radio"/> yes <input type="radio"/> no	<u>C2</u>

**C2**

IBM has a target of year-to-year reduction of hazardous waste indexed to output. Please ass Additional Comments below for IBM's performance against its target. Employee training is provided for those individuals involved in this program and the work associated with it. Management incentives are involved, but not as "additional recognition." Success in minimizing hazardous waste is a "base expectation" for the management of IBM's operations. Not meeting expectations in this area would have a negative impact on performance ratings.

**Additional Comments**

Since 1971, IBM's objective has been to identify and eliminate potential pollution before it becomes a problem, preferably by reducing the generation of hazardous waste at its source. IBM continuously explores ways and technological innovations to reduce chemical use and switch to more environmentally preferable chemicals in its manufacturing operations. For the waste that is generated, IBM focuses on preventing pollution through a comprehensive, proactive waste management program. IBM's goal in this area is to achieve a continual year-to-year reduction in hazardous waste generation indexed to output. In 2007, IBM's hazardous waste generation was reduced 8.4% indexed to output. This translates to a generation of 302 metric tons of hazardous waste less than what was projected based on production rate. The metric covers 90% of IBM's manufacturing and hardware development-related hazardous waste, which came from four sites. In 2006, IBM achieved an 8% reduction as well, and in 2005, IBM achieved a 19% reduction in hazardous waste indexed to output. In 2004, the reduction indexed to output was 33%.

## Water Discharge Impact GRI EN25

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Emissions, Effluents, and Waste / Water Discharge Impact GRI EN25

Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.

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**No Data Provided** because: Not Applicable

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#### Additional Comments

Discharges of water and runoff from IBM's operations do not significantly affect water bodies and/or related habitats. We conduct certain monitoring to confirm that (e.g., SPDES).

## Aspect: Products and Services

### Mitigate Product Impact GRI EN26

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Products and Services / Mitigate Product Impact GRI EN26

Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.

IBM's Product Stewardship Program was established in 1991 and has focused hardware development activities on the design attributes of energy efficiency, use of recycled materials, use of environmentally preferable materials and finishes, life cycle extension, product reuse and recyclability. Performance objectives for these attributes have long been part of IBM's Corporate Environmental Management System. For example, in tracking performance against its product-end-of-life management goal, since 1995 IBM has measured and documented the collection and recovery (resale, refurbishment or recycling) of more than 1.5 billion pounds (686.9 million kg) of product and product waste worldwide through year-end 2007. Annual targets for use of recycled content resins have resulted in corporate-wide consumption of over 11.8 million pounds (5.4 million kg) of plastic recyclate for IBM product applications since tracking began in 1995.

IBM's programs and initiatives for product energy efficiency are described in the Product Energy Savings question GRI EN6.

Performance objectives also include clean manufacturing initiatives like reducing perfluorocarbon emissions from semiconductor manufacturing processes. Annual reporting against corporate goals for product environmental performance is found in the IBM and the Environment reports at <http://www.ibm.com/ibm/environment>.

In addition, IBM's Product Stewardship Program maintains corporate standards for product development which include requirements for chemical emissions evaluation of products and completion of Product Environmental Profiles, an internal product evaluation/documentation program for products' significant environmental characteristics. Pertinent elements of these standards are communicated to suppliers through IBM's environmental specification, "Baseline Environmental Requirements for Supplier Deliverables to IBM," at <http://www.ibm.com/ibm/environment/products/especs.shtml>.

In 2007, new energy efficiency initiatives were announced with respect to IBM's services applications like data center management. See <http://www.ibm.com/ibm/green/index.shtml>.

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#### Supporting Documentation:

IBM Product Stewardship Page #: [View](#)

## Beneficial Products

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Products and Services / Beneficial Products

Does International Business Machines produce or sell any "green" products or environmentally beneficial products or services, including any of the following? Please upload any relevant details describing initiatives or programs, processes or product lines that contribute to solving environmental problems and achieving sustainable development.

	Year of implementation	% of revenues	
Pollution control equipment			<u>C2</u>
Emissions monitoring equipment			<u>C3</u>
Emissions reduction equipment			<u>C4</u>
Product with high recycled content			<u>C5</u>
Green Seal certified products			
Energy efficiency service contracting			<u>C7</u>
Other (please specify): Product Contributions our response to the question on 'Product Contributions'			<u>C8</u>
Other (please specify):			
Other (please specify):			

**C2**

Please see Additional Comments below.

**C3**

Please see Additional Comments below.

**C4**

Please see Additional Comments below.

**C5**

Please see Additional Comments below.

**C7**

Please see Additional Comments below.

**C8**

Please see Additional Comments below where we provide a few examples of the multitude of ways in which IBM's technology and services are contributing to environmental solutions and sustainability.

#### Supporting Documentation:

Energy, the Environment and IBM Page #: [View](#)

#### Additional Comments

IBM is not in the business of producing pollution control, emissions reduction or emissions monitoring equipment, nor in energy efficiency service contracting. We do have a program to use plastics with recycled content in our products, but our products do not contain a high percentage of plastic, as most of our product enclosures are made of metal.

There are, however, multitudes of ways in which IBM's technology, products and services contribute to energy efficiency, sustainable development and solving environmental problems. The following are just a few examples in two areas – climate protection and materials conservation.

**CLIMATE PROTECTION:** IBM's supercomputers/deep computing capabilities are being used for climate modeling. IBM's technology and services are enabling greater business and energy efficiency for our clients. Through IBM's "Project Big Green", IBM is redirecting \$1 billion per year across its businesses, mobilizing the company's resources to dramatically increase the level of energy efficiency in IT, including new products and services for IBM and its clients to sharply reduce data center energy consumption. IBM developed a congestion–charging system for Stockholm that cut peak–time traffic congestion by about 25%, reduced overall congestion by as much as 12% and boosted daily public transportation use by 40,000 riders per day.

**CONSERVATION:** IBM technology is making product design and manufacturing more efficient and reducing associated materials use and waste. For example, through computer–aided manufacturing and supply chain optimization, manufacturing processes can be made more efficient and inventories can be better managed to reduce unnecessary parts and materials and their transportation. Computer–aided design and visualization is

enabling the virtual design and testing of prototypes, eliminating the materials use that would have been associated with physical prototypes.

More information on the many ways in which IBM solutions are helping clients be more efficient and protective of the planet and climate may be found on IBM's "Energy, the Environment and IBM" Web site at <http://www.ibm.com/ibm/green/index.shtml> .

**Sold Products Packaging Reclaimed GRI EN27**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Products and Services / Sold Products Packaging Reclaimed GRI EN27**

Percentage of products sold and their packaging materials that are reclaimed by category.

Category of product sold	% of reclaimed products and their packaging materials in 2007	% of reclaimed products and their packaging materials in 2006	% of reclaimed products and their packaging materials in 2005	How data was collected	
Information technology (IT) products	42.4	49.22	43.6	Total weight of end-of-life IT product and product waste collected and processed by its global product end-of-life management (PELM) operations— which includes all IBM product lines; Servers, Storage, Retail Store Solutions (RSS) Points of Sale Systems, Printing Systems Division and Visual Products sold in conjunction with these systems— is compared against the total weight of sales for these same IBM hardware products in the same year. Sales data was collected directly from sources within the company while recovery and processing information is reported on a quarterly basis by PELM operations globally. These results confirm that IBM continues to be at the forefront of the IT Industry by maintaining a 10-year worldwide average recovery performance of 27.25% at year-end 2007.	<u>C2</u>

**C2**

IT Product Categories included: Visuals sold in conjunction with Servers and Storage Products, RSS and PSD products, Retail Store Solutions Systems, Servers Systems (i, p, x and z series), Storage Products (Edisk, Mdisk, Mdisk NAS, San Fabric, Etape and Mtape), and Printing Systems (Cutsheet, Continuous Form, Work Group, Thermal/impact). Personal Computing Division products (Desktop and Notebook Computers and Visuals sold in conjunction with these product lines) are also included for years 2004 and 1Q 2005 (IBM sold its Personal Computer Division to Lenovo in 2005). Data does not include packaging information

**Additional Comments**

The above data do not include product packaging. This IBM metric covers IT products only.

**Environmental Liability**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Products and Services / Environmental Liability**

Please indicate the amount accrued for environmental liability and the estimated amount in environmental remediation liability in the table below, and upload documentation as to the nature of the remediation that International Business Machines has undergone.

Currency: USD	FY 2007	FY 2006	FY 2005	
Total environmental liability	\$261M	\$252M	\$254M	
Accruals for environmental remediation	\$261M	\$252M	\$254M	
Company is a potentially responsible party (PRP) for one or more hazardous waste sites: Yes				
Total number of hazardous waste sites: 19				<u>C6</u>
Total number of Superfund sites: 16				<u>C7</u>

**C6**

The sites are those included in the above noted accrual for 2006.

**C7**

The sites are those included in the above noted accrual for 2006.

**Additional Comments**

When investigation and/or remediation at an IBM location or an off-site facility is probable, and its costs can be reasonably estimated, IBM establishes accruals for known environmental liabilities. Estimated costs connected with closure activities (such as removing and restoring chemical storage facilities) are accrued when the decision to close down a facility is made.

## Aspect: Compliance

### Environmental Law Non-compliance GRI EN28

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Compliance / Environmental Law Non-compliance GRI EN28

Monetary value of significant fines and total number of non-monetary sanctions/convictions for non-compliance with environmental laws and regulations.

Currency: USD	2007	2006	2005	2004	
Total monetary value of significant fines	0	0	0		<u>C2</u>
Total number of non-monetary sanctions	0	0	0		
Cases brought through dispute resolution mechanisms	None	None	None		

**C2**

Please see Additional Comments below.

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#### Additional Comments

In 2007, IBM received one administrative fine in the amount of \$1,000, which we consider to be insignificant from a monetary standpoint.

## Aspect: Transport

### Transport Impact GRI EN29

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Transport / Transport Impact GRI EN29

Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.

Report the significant environmental impacts of transportation used for logistical purposes and for transportation of members of the organization's workforce. Where quantitative data is not stated, disclose the reason:

##### LOGISTICS AND DISTRIBUTION:

IBM has been evaluating ways to make its logistics operations more efficient. IBM is an active participant in the U.S. EPA SmartWay Transport program, a voluntary partnership between freight carriers and shippers and the U.S. EPA to improve fuel efficiency and reduce greenhouse gas emissions. More than 80% (in U.S. dollars) of goods shipped by IBM within the U.S. and from the U.S. to Canada and Mexico is transported by SmartWay partners. IBM has also extended specific SmartWay requirements, such as dock management, truck idling and contract requirements, to its global distribution operations. For its efforts, the U.S. EPA recognized IBM with a 2007 SmartWay Excellence Award.

IBM's Global Logistics team has been working on optimizing the logistics operations through several initiatives. Analysis of the warehousing system indicated the opportunity for two consolidation projects which reduced warehouse space by several hundred thousand square feet and optimized product flow. This reduced energy use both for building operation and transportation. Through transportation mode analysis, the Global Logistics team was able to shift approximately 1,500 tons of shipping from air to more efficient ground or ocean transport in 2007 and drive some consolidation of loads to improve the shipping efficiency for our products by combining several product shipments onto a single truck. The Global Logistics team is working with other IBM groups to evaluate logistics management models that are being developed to determine their efficacy for use in IBM logistics operations to further improve the group's efficiency and reduce the fuel use and carbon emissions associated with logistics activities.

IBM's packaging team continues to identify opportunities to reduce packaging volume. For System x, a more efficient packaging system was developed which utilizes over 95% recycled material, making both the shipping more efficient and making use of existing raw materials. Shipping boxes for components were also redesigned, reducing packaging weights on three component types by over 180 tons. By focusing on the packaging design for both our products and those of our suppliers, we are able to reduce the costs and the CO2 emissions associated with shipping to our customers and within the IBM supply chain.

##### EMPLOYEE COMMUTE PROGRAMS:

IBM pioneered and continues to promote programs that reduce employees' commute to work. Two key elements are 1) our work-at-home program, where employees' 'work' office is their home and they have no IBM office, and 2) our mobile employees program, where employees work from home a number of days a week. Over 1/3 of IBM's global work force (over 100,000 employees) participates in these programs. In the U.S. alone, we estimate (using U.S. EPA factors) that IBM's work-at-home program has conserved approximately 7.75 million gallons of fuel and avoided over approximately 64,000 metric tons of CO2 emissions in 2007. In addition, approximately 2,000 tons of CO2 emissions were avoided in 2007 by employees using other commute-choice programs such as carpooling, vanpooling, etc. last year.

Globally, many IBM locations provide support for the use of public transit systems, shuttles from locations to mass transit stations and alternate transportation or "loaner" cars for work trips during the work day.

##### BUSINESS TRAVEL:

IBM's businesses require employees to travel by air and other modes of transportation to fulfill client and other business needs. IBM has developed a full suite of IT collaboration tools to enable real time collaboration anywhere (e.g. e-meeting, "sametime" web conferencing capabilities, advanced audio conferencing, video conferencing, and "sametime" instant messaging, voice suite and broadcast suite). These IT capabilities are widely deployed throughout the company and they enable reduction in business travel while fulfilling business needs where feasible. As an example, in 2006 using our "sametime" web conferencing capabilities, we held 217,000 meetings with 1,350,000 participants and 118,330,000 connection minutes. This represented an average of 1,042 meetings with 4,687 participants each business day and peak, concurrent system use of 292 meetings with 1,250 participants. Of these meetings, 16% involved external customers and business partners.

Where IBM provides leased vehicles for employees, IBM units in those countries are working with IBM Global Procurement and suppliers to offer high mileage vehicles. In France and Belgium, with over 2,600 lease vehicles, programs to offer high mileage vehicles have resulted in over 95% of the vehicles emitting 140 gm of CO2/km despite the availability of vehicles with emission levels up to 200 gm of CO2/km. A similar program is being offered in the U.K.

Indicate the criteria and methodology used to determine which environmental impacts are significant:  
See above response.

Report how the environmental impacts of transporting products, members of the organization's workforce, and other goods and materials are mitigated:  
See above response.



## Aspect: Overall

### Environmental Protection Expenditures GRI EN30

#### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / Environmental Protection Expenditures GRI EN30

Total environmental protection expenditures and investments by type.

Currency: USD (in millions)	2007	2006	2005	
Waste disposal	15.1	15.1	16.1	
Emissions treatment	4.8	4.6	5.2	<u>C3</u>
Remediation	23.1	26.1	15.2	
Prevention	11.6	10.3	10.5	
Environmental	39.6	40.5	40.6	
Total environmental protection	94.2	95.6	87.6	

#### C3

Please note: The "Emission treatment" figures provided do not include the original expenditure for municipal water in the cost of water/wastewater management for the reporting period 2005–2007. This is a change in methodology from our response last year, in which the original cost for municipal water was included.

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#### Additional Comments

IBM compares its environmental expenses to the estimated savings resulting from its policy of environmental leadership. IBM estimates that over the past eleven years, annual savings from its focus on pollution prevention and design for the environment have exceeded environmental expenses by an average of two-to-one.

Expenses include items such as personnel, laboratory testing, water and wastewater management, waste treatment and disposal, groundwater protection, remediation and other environmental system operations. Savings come from energy, material and water conservation, recycling, packaging improvement initiatives, reductions in chemical use and waste, and process improvements from pollution prevention. Ongoing savings from previous years' initiatives are not carried over in this comparison, yielding very conservative estimates.

IBM also realizes savings through the avoidance of costs that likely would occur in the absence of its environmental management system. These savings are not measurable in the same way that expenses are, but avoiding these environmental-related costs does result in savings for IBM, and a reasonable attempt has been made to quantify them. IBM reports this data annually in its environmental report.

## Environmental Responsibility

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / Environmental Responsibility

Please supply information below about the environmental management/oversight structure at International Business Machines. Please upload any relevant supporting documents.

Please check Guidance Notes.

		Role and responsibility	
Is there a board member with responsibility for environmental policy?	<input checked="" type="radio"/> Yes <input type="radio"/> No	The Chairman of the Board who, in his role as CEO, issues the company's corporate environmental policy.	
Is there an Environmental Committee?	<input checked="" type="radio"/> Yes <input type="radio"/> No	The Directors & Corporate Governance Committee is responsible for reviewing and considering the company's position and practices on significant issues of corporate responsibility, including protection of the environment.	
Please indicate the title of the company's highest-ranking officer/manager responsible for environmental issues:	Executive Vice President, Innovation and Technology		
Are there executive officers with explicit environmental responsibilities at all major business units?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Each manufacturing location has an executive assigned for environmental oversight. They may or may not be an executive officer. Further, major business functions have an identified person responsible for environmental program oversight.	
Is there an environmental department director manager/coordinator (senior management) who is responsible for the company's environmental policies?	Yes		<u>C6</u>
Is there an environmental department director manager/coordinator (non-senior management) who is responsible for the company's environmental policies?	No		<u>C7</u>
Number of employees in environmental department	441		
Contact info for environmental department	Vice President, Corporate Environmental Affairs & Product Safety		
Is there an environmental working group?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Corporate Environmental Affairs & Product Safety (this is a corporate staff	

<p>If specific responsibility is allocated for climate change-related issues, please select the highest level of responsibility:</p>	<ul style="list-style-type: none"> <li><input type="radio"/> Board member</li> <li><input type="radio"/> Board (main board or board committee)</li> <li><input checked="" type="radio"/> Corporate environmental manager/coordinator</li> <li><input type="radio"/> Environmental committee</li> <li><input type="radio"/> Environmental department director</li> <li><input type="radio"/> Business unit level manager</li> <li><input type="radio"/> None</li> <li><input type="radio"/> Other</li> </ul> <p style="text-align: right;">Please specify:</p>	<p>organization)</p> <p>Levels from CEO (0=direct to CEO): 1</p>	<p><u>C11</u></p>
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**C6**

IBM's environmental policy was issued by the CEO. IBM's Vice President, Corporate Environmental Affairs & Product Safety, is responsible for reviewing the company's environmental policy annually and to report IBM's performance against the programs with which IBM supports the policy objective. He reports to the Executive Vice President, Innovation and Technology, who reports to the CEO.

**C7**

As noted in the previous question and comment C6, IBM's corporate environmental policy is issued by the CEO and senior management is responsible for the programs supporting the policy.

**C11**

Please note: This "corporate environmental manager" is IBM's Vice President of Corporate Environmental Affairs & Product Safety. He is the head of this corporate staff organization. He is one level from the CEO.

**Supporting Documentation:**

Directors and Corporate Governance Committee Charter Page #: [View](#)

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / EMS**

Please indicate whether International Business Machines has implemented an Environmental Management System (EMS). Please upload a full description of International Business Machines's EMS, including managerial structure, responsibility and procedures, and number of employees in environmental management positions. If International Business Machines does not have an EMS, please upload a full description of any systems in place for managing environmental issues. Select all that apply to International Business Machines's EMS below.

Percentage of company to which the EMS applies:	100%	<u>C1</u>																																																								
Select the indicator to which the figure above applies:	<input checked="" type="checkbox"/> Turnover/Revenue <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Sites <input checked="" type="checkbox"/> Employees	<u>C2</u>																																																								
<table border="0"> <tr> <td><input type="checkbox"/></td> <td>Company has not implemented an EMS</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Applies worldwide</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Applies in non-OECD countries</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>Has no internal audits</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Contains specific goals and objectives</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Has management incentives</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>Has publicly disclosed external audits certified by third party</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Includes an environmental policy</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Includes identification and evaluation of key impacts and/or aspects</td> <td>Please specify:</td> <td>The identification of our key environmental aspects is a standard part of IBM's EMS.</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Sets measurable quantitative objectives and targets</td> <td>Please specify:</td> <td>IBM established goals that address its aspects, and they include goals in the areas of energy conservation, CO2 emissions reduction, PFC emissions reduction, water conservation, pollution prevention, waste recycling, and product stewardship goals with respect to energy efficiency, materials and product end-of-life management.</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Auditing/screening of suppliers/contractors</td> <td>Please specify:</td> <td>Corporate Directive on Environmental Evaluation of Suppliers includes audits of suppliers. Audits are also conducted in association with IBM's Supplier Conduct Principles</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Has documented structure and procedures</td> <td>Please specify:</td> <td>IBM's EMS includes documented structure and procedures.</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Includes monitoring and auditing</td> <td>Please specify:</td> <td>Internal Corporate Audits, self-assessments, peer reviews and audits conducted by the ISO registrar are part of IBM's single global registration to ISO 14001</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>** Includes an internal reporting and management review</td> <td>Please specify:</td> <td>Reviews of IBM's EMS and environmental performance include the following: (1) IBM's worldwide EMS is reviewed with the Director, Corporate Environmental Affairs, at least annually. IBM's environmental performance is reviewed with</td> </tr> </table>	<input type="checkbox"/>	Company has not implemented an EMS			<input checked="" type="checkbox"/>	Applies worldwide			<input checked="" type="checkbox"/>	Applies in non-OECD countries			<input type="checkbox"/>	Has no internal audits			<input checked="" type="checkbox"/>	Contains specific goals and objectives			<input checked="" type="checkbox"/>	Has management incentives			<input type="checkbox"/>	Has publicly disclosed external audits certified by third party			<input checked="" type="checkbox"/>	Includes an environmental policy			<input checked="" type="checkbox"/>	** Includes identification and evaluation of key impacts and/or aspects	Please specify:	The identification of our key environmental aspects is a standard part of IBM's EMS.	<input checked="" type="checkbox"/>	** Sets measurable quantitative objectives and targets	Please specify:	IBM established goals that address its aspects, and they include goals in the areas of energy conservation, CO2 emissions reduction, PFC emissions reduction, water conservation, pollution prevention, waste recycling, and product stewardship goals with respect to energy efficiency, materials and product end-of-life management.	<input checked="" type="checkbox"/>	** Auditing/screening of suppliers/contractors	Please specify:	Corporate Directive on Environmental Evaluation of Suppliers includes audits of suppliers. Audits are also conducted in association with IBM's Supplier Conduct Principles	<input checked="" type="checkbox"/>	** Has documented structure and procedures	Please specify:	IBM's EMS includes documented structure and procedures.	<input checked="" type="checkbox"/>	** Includes monitoring and auditing	Please specify:	Internal Corporate Audits, self-assessments, peer reviews and audits conducted by the ISO registrar are part of IBM's single global registration to ISO 14001	<input checked="" type="checkbox"/>	** Includes an internal reporting and management review	Please specify:	Reviews of IBM's EMS and environmental performance include the following: (1) IBM's worldwide EMS is reviewed with the Director, Corporate Environmental Affairs, at least annually. IBM's environmental performance is reviewed with		
<input type="checkbox"/>	Company has not implemented an EMS																																																									
<input checked="" type="checkbox"/>	Applies worldwide																																																									
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<input checked="" type="checkbox"/>	Has management incentives																																																									
<input type="checkbox"/>	Has publicly disclosed external audits certified by third party																																																									
<input checked="" type="checkbox"/>	Includes an environmental policy																																																									
<input checked="" type="checkbox"/>	** Includes identification and evaluation of key impacts and/or aspects	Please specify:	The identification of our key environmental aspects is a standard part of IBM's EMS.																																																							
<input checked="" type="checkbox"/>	** Sets measurable quantitative objectives and targets	Please specify:	IBM established goals that address its aspects, and they include goals in the areas of energy conservation, CO2 emissions reduction, PFC emissions reduction, water conservation, pollution prevention, waste recycling, and product stewardship goals with respect to energy efficiency, materials and product end-of-life management.																																																							
<input checked="" type="checkbox"/>	** Auditing/screening of suppliers/contractors	Please specify:	Corporate Directive on Environmental Evaluation of Suppliers includes audits of suppliers. Audits are also conducted in association with IBM's Supplier Conduct Principles																																																							
<input checked="" type="checkbox"/>	** Has documented structure and procedures	Please specify:	IBM's EMS includes documented structure and procedures.																																																							
<input checked="" type="checkbox"/>	** Includes monitoring and auditing	Please specify:	Internal Corporate Audits, self-assessments, peer reviews and audits conducted by the ISO registrar are part of IBM's single global registration to ISO 14001																																																							
<input checked="" type="checkbox"/>	** Includes an internal reporting and management review	Please specify:	Reviews of IBM's EMS and environmental performance include the following: (1) IBM's worldwide EMS is reviewed with the Director, Corporate Environmental Affairs, at least annually. IBM's environmental performance is reviewed with																																																							

		<p>the Vice President, Corporate Environmental Affairs quarterly. Major environmental accomplishments, events, and/or issues are communicated to the Director of Corporate Environmental Affairs, the Vice President, Corporate Environmental Affairs and Product Safety, and the Executive Vice President Innovation and Technology on a monthly basis through status reports. The CEO reviews the status of IBM's environmental performance annually when reviewing the IBM Corporate Responsibility Report and an overview of IBM's environmental affairs is presented annually to the IBM Board of Directors' Directors and Corporate Governance Committee.</p>		
<input checked="" type="checkbox"/> Staff training and awareness measures				
<input checked="" type="checkbox"/> ** Includes systematic environmental impact assessment (EIA)	Please specify:	IBM has a Corporate Directive on EIA.		
<input checked="" type="checkbox"/> Conducts periodic management reviews of the EMS	Please specify:	<p>Reviews of IBM's EMS and environmental performance include the following: (1) IBM's worldwide EMS is reviewed with the Director, Corporate Environmental Affairs, at least annually. IBM's environmental performance is reviewed with the Vice President, Corporate Environmental Affairs quarterly. Major environmental accomplishments, events, and/or issues are communicated to the Director of Corporate Environmental Affairs, the Vice President, Corporate Environmental Affairs and Product Safety, and the Executive Vice President Innovation and Technology on a monthly basis through status reports. The CEO reviews the status of IBM's environmental performance annually when reviewing the IBM Corporate Responsibility Report and an overview of IBM's environmental affairs is presented annually to the IBM Board of Directors' Directors and Corporate Governance Committee.</p>		
<input checked="" type="checkbox"/> Applies to a percentage of company's activities	Please specify:	100%		
<input type="checkbox"/> * A decentralized environmental database or information system				
<input checked="" type="checkbox"/> * A centralized, group-wide environmental database or information system				
<input type="checkbox"/> * Environmental database or information system embedded in group-wide risk management system/framework				
<input checked="" type="checkbox"/> * Direct environmental data of own business operations tracked				
<input type="checkbox"/> * Indirect environmental risks/issues related to lending, investing, underwriting, if possible indicate number of years tracking this data:	Please specify:			
<input type="checkbox"/> * No EMS database or information system				
List the business units to which EMS applies:			The EMS is applicable to the entire company.	

**C1**

IBM's corporate policy on environmental affairs and the environmental management system supporting this policy are applicable to all of the company's employees and operations worldwide.

**C2**

IBM's corporate policy on environmental affairs and the environmental management system supporting this policy are applicable to all of the company's employees and operations worldwide.

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**Supporting Documentation:**

IBM ISO 14001 Certification Page #: [View](#)

IBM Global EMS Page #: [View](#)

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**Additional Comments**

In 1997, IBM became the first major multinational to earn a single global registration to ISO 14001. The certification covers IBM's manufacturing, product design, hardware development and chemical–using research operations across its business units worldwide. IBM was able to earn this single worldwide registration to ISO 14001 based on the effectiveness of its long–standing global environmental management system.

**EMS Certification**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / EMS Certification**

International Business Machines's Environmental Management System (EMS) is certified/verified/audited or employs the following external management systems, by percentages as indicated in the table below.

If not applicable, please indicate in the No Data section and explain in Additional Comments.

Name of Certification System	Percent certified for current reporting year	Percent certified in current reporting year by	Target certification by NEXT reporting year	
All EMS Systems	%	<input type="radio"/> Facilities/Sites <input type="radio"/> Turnover/Revenue <input type="radio"/> Production <input type="radio"/> Employees		
<input checked="" type="checkbox"/> ISO 14001	% 100			<u>C3</u>
<input type="checkbox"/> EMAS (European Eco-management and Audit Schemes)	%			
<input type="checkbox"/> JIS Q14001	%			
<input type="checkbox"/> Responsible Care	%			
<input type="checkbox"/> Certification by third party or specialized companies:	%			
<input type="checkbox"/> ISO 14001 <input type="checkbox"/> JIS Q 14001 <input type="checkbox"/> EMAS <input type="checkbox"/> Other EMS audits/verification				
<input type="checkbox"/> Certification by company's internal personnel or specialists from headquarters:	%			
<input type="checkbox"/> ISO 14001 <input type="checkbox"/> JIS Q 14001 <input type="checkbox"/> EMAS <input type="checkbox"/> Other EMS audits/verification				
Percent of total revenues generated from assets under EMS control	%			<u>C14</u>
<input type="checkbox"/> Environmental management system is not verified/audited/certified				

**C3**

In 1997, IBM became the first major multinational to earn a single global registration to ISO 14001. The certification covers IBM's manufacturing, product design, hardware development and chemical-using research operations across its business units worldwide. IBM was able to earn this single worldwide registration to ISO 14001 based on the effectiveness of its long-standing global environmental management system.

**C14**

IBM's global environmental management system is applicable to all of its operations and all of its employees worldwide.

**Supporting Documentation:**

IBM ISO 14001 Certification Page #: [View](#)

IBM Global EMS Page #: [View](#)

## Environmental Training

### 5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / Environmental Training

Does International Business Machines conduct any of the following with respect to environmental training?

	If yes, % of company covered	Pilot projects	Training time in person-hours per year	
<input checked="" type="checkbox"/> Environmental training of employees				<u>C2</u>
<input checked="" type="checkbox"/> Communicate with employees on environmental issues				<u>C3</u>
<input checked="" type="checkbox"/> Environmental training provided to all new employees				<u>C4</u>
<input checked="" type="checkbox"/> Advanced training programs				<u>C5</u>

**C2**

See information provided in the Additional Comments section below.

**C3**

See information provided in the Additional Comments section below.

**C4**

See information provided in the Additional Comments section below.

**C5**

See information provided in the Additional Comments section below.

#### Additional Comments

IBM's communications and requirements for environmental training for its employees vary, depending on the employees' job responsibilities. All IBM employees worldwide are periodically required to read and certify their compliance to IBM's Business Conduct Guidelines. These Guidelines cover areas in which employees have a responsibility to the company, and they include the awareness of and compliance with IBM's corporate environmental policy and other environmental requirements. IBM has a global environmental management system (EMS) supporting its corporate environmental policy, and relevant environmental training is integral to the proper functioning of the EMS. Environmental training is commensurate with employees' job responsibilities. There may be several types of training required, with depth of content and breadth of topics varying depending on the work location activities, products and services, and on the duties performed by employees. Accordingly, environmental training can range from general environmental awareness to more complex, professional training such as hazardous waste management and certification, training for treatment plant operations, etc.

IBM locations and/or business units identify environmental training needs and provide appropriate training for employees. Employees having environmental responsibilities in their jobs must be competent in their function (i.e., possess the ability, knowledge and any other necessary attribute to perform their job). A documented procedure is maintained to ensure these employees are aware of, understand and are trained for the following :

- a. the importance of conformance to the environmental policy and procedures and with the requirements of the EMS;
- b. the significant environmental aspects, and actual or potential impacts of their work activities and the environmental benefits of improved personal performance;
- c. their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the EMS, including emergency preparedness and response requirements;
- d. their roles and responsibilities with respect to achieving environmental objectives and targets; and
- e. potential consequences of departure from site specific operating procedures, as it pertains to their job.

**Environmental Report**

**5. Management Approach and Performance Indicators / Environmental / Environmental Performance Indicators / Aspect: Overall / Environmental Report**

Please complete table below describing International Business Machines's environmental reporting and upload a copy(ies) of the report.

<input checked="" type="checkbox"/> Publishes separate environmental report	Frequency: IBM has published an annual environmental report since 1990. In 2004, IBM began publishing an "IBM Corporate Responsibility Report", in which IBM's environmental reporting was included. IBM is publishing both an "IBM and the Environment" report (a comprehensive environmental report) and including environmental information in the "IBM Corporate Responsibility Report" in 2007. Information is also made available on the "Energy, the Environment and IBM " Web site at <a href="http://www.ibm.com/ibm/green/index.shtml">http://www.ibm.com/ibm/green/index.shtml</a> .	Title: IBM and the Environment, followed by the IBM Corporate Responsibility Report  First issued: 1990  Last updated: 2007  % of company covered: 100%  % applies to one of the following – revenue, production, employees, or other (specify): IBM's business activities and employees worldwide	
<input checked="" type="checkbox"/> CSR report includes environmental reporting			
<input type="checkbox"/> Intends to publish separate environmental report	When?		
<input checked="" type="checkbox"/> Publishes environmental information on website	Frequency: IBM provides its environmental report and its Corporate Responsibility report on its "Environment" <a href="http://www.ibm.com/ibm/environment/">ibm.com</a> Internet site at <a href="http://www.ibm.com/ibm/environment/">http://www.ibm.com/ibm/environment/</a> . The reports are being produced annually. Additional environmental information is provided on the Web site and it is updated periodically with 'new news'.		
<input type="checkbox"/> Publishes environmental information in annual report		% of company covered:	
<input type="checkbox"/> Subsidiaries (> or = 50% owned) issue separate reports	Details:	% of overall company covered by separate reports:	
<input type="checkbox"/> Public reports are externally verified			
Content of publication:			
<input checked="" type="checkbox"/> Environmental policies and principles			<u>C9</u>

<input checked="" type="checkbox"/> Environmental performance	<p>Please explain how data is recalculated for previous years to account for acquisitions, disposals, plant closures, or changes in methodology: IBM's goals, as they have been developed, are not impacted by acquisitions, disposals or plant closures. Some (i.e., energy conservation, waste recycling) are percentages of the annual total use or generation. One (hazardous waste) is indexed to manufacturing output. Others (PFCs, water conservation) are specific to a particular operation (semiconductor manufacturing). Still others relate to products, where goals are percentages of annual totals or are year-to-year improvements over previous generation products or models. There have not been changes in methodology, but if there were to be, they would be explained.</p> <p>Please explain the level of verification/quality assurance of the data, and how this is expected to change in future years: IBM's environmental management system, including its performance data reporting system, is audited as part of the ISO 14001 audits performed by the independent ISO 14001 auditors.</p>	<p>% of company operations covered:</p> <p>% applies to one of the following – revenue, production, employees, or other (specify):</p> <p>If less than 100%, the following operations are not covered:</p>	<u>C10</u>
<input checked="" type="checkbox"/> Follows Global Reporting Initiative to disclose environmental performance			<u>C11</u>
<input checked="" type="checkbox"/> Reports to shareholders on exposure to and management of climate change risks			<u>C12</u>

**C9**

IBM's environmental policy is published on its Environment website at <http://www.ibm.com/ibm/environment/policy/> , as well as on its Corporate Responsibility website at <http://www.ibm.com/ibm/responsibility/policy1.shtml> .

**C10**

The operations covered by IBM's various goals are described in the responses to each of the questions on those specific goal areas. It may be all operations, all locations, all semiconductor manufacturing, all products, etc. Please see the specific OneReport question on each goal topic for that respective coverage information.

**C11**

In addition to its "IBM and the Environment" and IBM Corporate Responsibility reports, IBM also produces a report that maps to the GRI report/index. That report may be found on IBM's Corporate Responsibility Web site at <http://www.ibm.com/ibm/responsibility/globalreportingindex.shtml>

**C12**

IBM includes information and performance data on its climate protection programs in its "IBM and the Environment" report and its "IBM Corporate Responsibility Report". IBM also participates in a number of voluntary GHG emissions reporting programs, including the U.S. Dept. of Energy Voluntary Reporting Greenhouse Gas Emissions (1605b) Reporting programs (one of only three companies to be reporting through this program since its inception) and the Carbon Disclosure Project (in which we've also participated every year since its inception).

**Supporting Documentation:**

IBM and the Environment Report 2006      Page #: [View](#)  
Corporate Policy 139 Environmental Affairs      Page #: [View](#)  
IBM GRI Report      Page #: [View](#)