HP operations

HP owns and leases more than 770 sites in 95 countries worldwide. Our global scale brings obligations as well as opportunities to benefit communities and the environment. We are committed to growing the positive economic influence of our business, while finding new ways to reduce its environmental impact. We do this through continual innovation and improvement in our business processes and operations.

Our most significant environmental impact from operations is greenhouse gas (GHG) emissions due to the energy our offices, data centers, and manufacturing facilities use. (See Energy and GHG emissions on page 53 for detail.) Other environmental impacts from our operations are those associated with waste disposal, paper use, water consumption, site remediation, and the use of ozone-depleting substances.

Our manufacturing facilities have additional impacts including wastewater discharges, and permitted releases of toxic substances.

HP's environmental, health, and safety (EHS) management system is designed to ensure that all our facilities comply with applicable regulations and meet company standards.

About our operational data

Data relating to HP operations is based on our fiscal year (which ends October 31).

In 2011, we collected data from 315 sites (including all HP-owned manufacturing sites and our largest owned and leased office, warehouse, data center, and distribution sites). This accounted for 81% of our total floor space of approximately 7.1 million square meters. We extrapolated data as available from comparable operations, primarily data centers and office space, for the remaining floor space, unless stated otherwise.

We continue to refine the process by which we collect data and calculate trends. In 2011, we began installing Hara energy and sustainability management software to improve our understanding of our operational impacts, more accurately measure and monitor energy consumption, and identify areas with the greatest potential for savings. HP's Energy and Sustainability Management (ESM) group is also involved in this global implementation. The ESM group will apply the insights and best practices they gain to benefit other customers undertaking similar deployments. We will report on progress in our 2012 Global Citizenship Report.

See the HP list of major operations on page 65.

Highlights

20%

Reduction in GHG emissions from operations between 2005 and 2011, meeting our 2013 goal 2 years early

14,700 tonnes

Reduction in amount of nonhazardous waste from 2010, a 14.5% decrease

8 billion liters

Global water consumption, a 1.4% decrease from 2010

Management and compliance

HP is committed to leadership standards in environmental, health, and safety (EHS) performance, including conducting our operations in an environmentally responsible manner and enabling our employees to work without injury at our facilities and other locations.

Our EHS Management System helps us achieve these objectives and ensures that we comply with regulations and meet company standards across all HP facilities. At its core is our EHS policy.

HP manufacturing operations worldwide are certified to ISO 14001, the international standard for environmental management systems.

To help ensure that we continue to meet our EHS objectives as we grow, newly acquired companies must implement our EHS management system as a part of their integration.

We investigate any allegations of noncompliance with the law to correct any noncompliance, determine the root causes and, if applicable, implement corrective action to help prevent recurrence.

Our management of health and safety, and also wellness, are covered in the HP people section of this report.

Environmental risk assessment

HP's Enterprise Risk Management program evaluates a broad range of risks at the enterprise, business, and functional levels. This enables us to identify critical risks and target mitigation programs at the appropriate level within the company.

In 2011 we conducted a targeted assessment of risks such as regulatory changes, physical changes, energy costs, and water availability for our 26 most critical operations. This assessment showed that we have in place measures to help mitigate these risks, such as energy purchase programs, capital equipment upgrades, and regulation monitoring. We also have implemented numerous energy and water conservation programs and projects that help meet the common objectives of cost reduction, goal attainment, and risk management.

While we anticipate that our operations will become increasingly subject to regulatory and cost challenges related to climate change and water scarcity, we do not believe these changes will disproportionately affect HP relative to the market.

Energy and GHG emissions

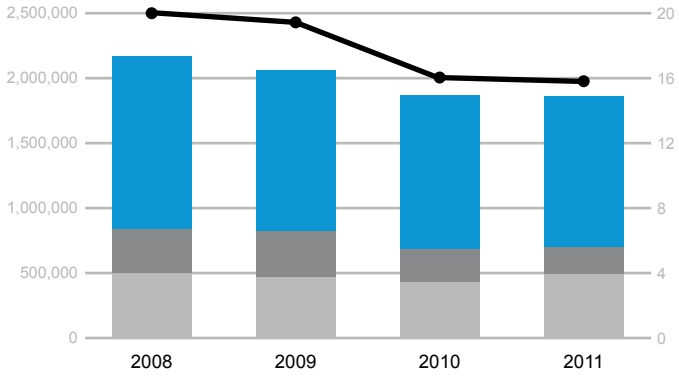
HP is committed to making our global operations more energy efficient, using low-carbon energy sources where possible, and reducing employees' business travel. These activities, in turn, help reduce our climate impact.

Our goal is to cut absolute greenhouse gas (GHG) emissions from our operations (not including employee travel) to 20% below 2005 levels by 2013. We met this goal 2 years early. In 2011, GHG emissions from our operations equaled 1,856,500 tonnes of carbon dioxide equivalent (CO_2e), a small decrease from 1,865,100 tonnes of CO_2e in 2010 and a 20% reduction from our 2005 baseline. We adjust our baseline to account for acquisitions and divestitures.

By the end of 2012, we intend to create a new goal for reduction of GHG emissions from operations. We also plan to reset our GHG emissions baseline, based on enhanced data available through new energy and environmental management software.

In 2011 we started recording our GHG emissions intensity to measure our performance relative to business growth. Using this metric, GHG emissions per $ million USD of net revenue dropped 2% from 2010 to 2011, and decreased 20% compared with 2005.

Greenhouse gas emissions from operations, 2008–2011* [tonnes CO_2e]



	2008	2009	2010	2011
Americas	1,327,400	1,241,500	1,179,900	1,162,700
Europe, Middle East, and Africa	338,800	356,600	253,800	208,500
Asia Pacific and Japan	499,300	462,200	431,400	485,300
Total	**2,165,500**	**2,060,300**	**1,865,100**	**1,856,500**
GHG emissions intensity** [tonnes CO_2e/ $ million USD of net revenue]	**19.90**	**19.31**	**15.95**	**15.71**

* Total includes Scope 1 and Scope 2 emissions in table, except emissions from HP auto fleet and HP air fleet.

** Worldwide GHG emissions do not include employee travel. Historical emissions intensity values were calculated using HP's annual revenue as characterized in financial reporting and GHG emissions from facilities, the HP auto fleet, and the HP air fleet as reported for that year in the HP Global Citizenship Report (i.e., historical values were not adjusted for corporate acquisitions per the GHG Protocol). Our baseline emissions in 2005 without adjustments for corporate acquisitions (such as Enterprise Data Services in 2008) was 1,551,300 tonnes of CO_2e. Though our intensity value increased due to the acquisition of Enterprise Data Services in 2008, we have implemented a variety of energy-efficiency measures and made purchases of renewable energy that have subsequently decreased this number.

Sources of GHG emissions from operations

Energy use (see Energy efficiency on page 55) accounts for 97% of the GHG emissions generated by our operations and represents one of the largest costs of operating our facilities.

The remaining 3% comes from refrigeration equipment, the use of diesel for backup generators, and a small number of HP manufacturing processes. This includes emissions from the use of perfluorocarbons (PFCs) for semiconductor manufacturing (see sidebar at right).

We commission independent auditor Bureau Veritas Certification to verify our global GHG emissions across our global facilities and our annual reporting under the GHG measurement and reporting protocols of the World Resources Institute and World Economic Forum. Verification of HP's 2011 data will occur after the publication of this report.

Perfluorocompounds (PFCs)

In 2010 we fully met and concluded our commitment under the U.S. Environmental Protection Agency—Semiconductor Industry Association (SIA) PFC Emission Reduction Partnership, having reduced PFC-related GHG emissions by 87% since 1995, and greatly surpassing the voluntary partnership goal of 10% reduction.

In 2011 we decided to use a more conservative emissions factor to ensure we do not underestimate our PFC-related emissions. This led to larger calculated emissions in 2011 even though our PFC usage continued to drop. Total PFC-related GHG emissions are still less than 0.5% of our total GHG emissions from HP operations.

The small quantities of PFCs now emitted are projected to remain at this level for the foreseeable future. See the breakdown in Data dashboard: environment on page 69.

Sources of GHG emissions from HP operations, 2011*

Electricity (Scope 2)**	93%
Natural gas (Scope 1)	4%
Refrigerant emissions (Scope 1)	2%
Diesel (Scope 1)	<1%
Manufacturing emissions (Scope 1)	<1%

* Numbers do not equal 100% due to rounding.

** Takes into account electricity generated from renewable energy.

About our GHG emissions data

We calculate our GHG emissions according to the GHG Protocol of the World Business Council for Sustainable Development and the World Resources Institute. In this section, we report HP's Scope 1, 2, and 3 GHG emissions[1] arising from HP's operations, automotive and air fleets, and employee business travel.

- Scope 1 emissions include those from the direct use of natural gas, diesel fuel, refrigerants, and PFCs in operations, and from fuel used by HP's automotive and air fleets.
- Scope 2 emissions are from purchased electricity.
- Scope 3 emissions in our operations result from employee business travel by commercial airlines and rental cars. In other sections of this report, we also disclose estimated Scope 3 emissions from product manufacturing by suppliers, product transport, and product recycling (which has a net GHG emissions benefit).

See Data dashboard: environment on page 69 to view HP's GHG emissions grouped by Scope.

We report our GHG emissions yearly through the Carbon Disclosure Project (CDP) and in 2011 we were included in the CDP's S&P 500 Carbon Disclosure Leadership Index. The Index highlights constituent companies within the S&P 500 Index based on the level and quality of their climate change information disclosure practices.

Energy efficiency

Improving the energy efficiency of HP's operations is a fundamental part of our strategy for reducing our energy costs and greenhouse gas (GHG) emissions.

HP operations consumed 4,122 million kilowatt hours (kWh) of energy in 2011, a small decrease from 4,140 million kWh in 2010. We saw an 11% decrease in natural gas use and a 1% increase in electricity use compared with 2010.

In 2011 we started reporting our energy intensity to measure our performance relative to business growth. Using this metric, energy use per $ million USD of net revenue dropped 1% from 2010 to 2011, and decreased 13% compared with 2005.

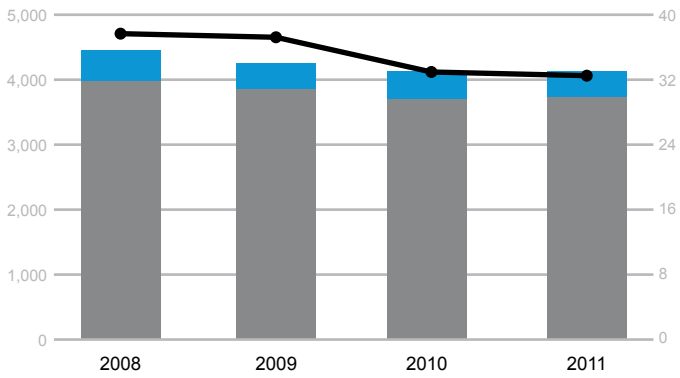
We regularly implement projects to decrease energy use across the company. Initiatives include consolidating our facilities into fewer, more efficient sites, and installing energy-efficient technology and lighting in offices, research labs, and data centers.

Making data centers more efficient

We operate more than 100 client-serving (or "trade") data centers worldwide, in addition to our six internal data centers located in three cities in the United States. Growing customer demand for data services managed by our trade data centers makes building, retrofitting, and operating highly energy-efficient data centers and consolidating existing facilities all the more important, as typical data centers consume 20 to 40 times as much energy per square meter as offices.

[1] The World Resources Institute (WRI) defines Scope 1, 2, and 3 GHG emissions in its Greenhouse Gas Protocol; see www.ghgprotocol.org/calculation-tools/faq.

Energy use from operations, 2008–2011 [million kWh]



	2008	2009	2010	2011
Natural gas	469	399	435	389
Electricity*	3,972	3,849	3,705	3,733
Total	**4,441**	**4,248**	**4,140**	**4,122**
Energy intensity [thousand kWh/$ million USD of net revenue]	**37.52**	**37.08**	**32.85**	**32.40**

* Includes purchased electricity as well as electricity generated on site.

All design teams for new data centers include an individual responsible for ensuring that energy-efficiency measures are considered throughout the design and build process. HP Enterprise Services, HP Global Real Estate, and HP Critical Facilities Services have established design criteria for new data centers, including the use of modular designs to accommodate future growth and the ability to adapt to local climatic conditions to take advantage of the use of ambient air for cooling. Learn more in Design on page 34.

During 2011, we completed energy-efficiency initiatives at our data centers that we project will save approximately 13 million kWh and avoid an estimated 7,200 tonnes of carbon dioxide equivalent (CO_2e) emissions on an annual basis. Initiatives included improvement of floor and ceiling ventilation, replacement of existing cooling and air conditioning systems with more efficient models or alternatives, and redesign of server rack layouts for better temperature regulation.

Our award-winning Wynyard trade data center in the United Kingdom, which opened in January 2010, is powered by 100% renewable energy and is one of the most efficient general purpose data centers in the world. It is cooled using ambient air nearly year-round, and features technology to humidify and recirculate air as necessary to maintain constant conditions, white walls to reduce the amount of lighting needed, and a reflective roof to reduce heat absorption. Wynyard has a power usage effectiveness (PUE)[2] rating of 1.2, 40% better than the industry average (1.0 is the best possible rating). In 2011, the center received a Silver Award in the Best Green Energy Efficiency Initiative category at the International Green Awards™.

HP employees making an impact: David Fuqua

David Fuqua leads a team dedicated to conserving energy in HP's trade data centers. Their completed initiatives in 2011 will save HP 13 million kWh a year. Learn more about David Fuqua on page 138.

Other examples of energy-efficiency initiatives include:

- HP's new Streetsville data center in Mississauga, Ontario, Canada, will be the first data center in our portfolio to use a "Kyoto Wheel" heat exchanger for its primary cooling. The technology reduces the need for mechanical cooling by transferring heat to the outside air stream through a heat wheel heat exchanger. The separation of the outside air stream also significantly reduces the potential for contamination of the server room while maintaining humidity levels. We estimate the technology will save HP up to $24 million USD over 20 years subsequent to completion of construction in 2012.
- A new server room completed in 2011 at our Boise, Idaho, United States, campus is expected to save an estimated 4 million kWh per year due to extensive use of ambient air and water for cooling. We estimate that the new cooling system will cut the use of traditional chilling units by more than 90%.

[2] Power usage effectiveness is the accepted measure of data center energy efficiency.

- In 2010 we began construction of a new data center in Sydney, Australia, that is expected to have a PUE rating of 1.3, in part due to an innovative roof-mounted "indirect evaporative cooling" system. We anticipate that the data center, which replaces four older facilities, will reduce energy use significantly.
- Variable frequency drives installed on existing air conditioning units at data centers in Austin and Houston, Texas, United States, completed in 2012, will save approximately 10 million kWh a year.

Our six internal data centers are expandable to more than double their existing area, enabling us to accommodate substantial future growth. Each is built with the environment in mind, and our data center in Hockley, near Houston, has obtained the LEED® Gold sustainable building certification. See Sustainable building design on page 63.

HP employees making an impact: Tom Barrington

Tom Barrington spends his days looking for ways to cut energy and water use across HP's global facilities—and recently helped HP reach a key milestone in reducing greenhouse gas emissions. Learn more about Tom Barrington on page 136.

Data center consolidation

Data center consolidation helps us reduce costs, phase out older technologies, and improve service levels, while decreasing energy use and associated GHG emissions.

In late 2011, HP Enterprise Services continued its multiyear plan to reduce the number of internal and customer-facing data centers it operates worldwide, and to make existing data centers more energy efficient.

During 2011, we reduced our data center and computer lab floor space by close to 48,000 square meters, while maintaining our presence in all the world's major regions and our ability to support customers worldwide. Through these changes, including decommissioning servers and switching some physical servers to virtual ones, we estimate that we will avoid about 170 million kWh of energy use and nearly 90,000 tonnes of CO_2e emissions on an annualized basis.

Renewable energy

Switching to renewable energy sources supports HP's goal to reduce absolute greenhouse gas (GHG) emissions, although our priority remains cutting total energy use by making our operations more efficient.

We purchased approximately 440 million kilowatt hours (kWh) of renewable energy worldwide in 2011, equivalent to more than 10% of the overall electricity use in our facilities and a 41% increase since 2010. This includes energy generated on-site and the renewable energy credits (RECs) we buy as part of electricity contracts in the United States. This is in addition to the renewable energy available by default in the power grid, and achieves our goal for 2012[1] ahead of time.

We are committed to maintaining renewables as a part of our energy mix to make continued progress in emissions reductions.

The following table highlights some renewable energy initiatives from 2011.

Region	Initiative
Americas	We installed more than 1,400 roof-top solar panels at our data center in Suwanee, Georgia, United States, which we estimate will generate approximately 450,000 kWh per year, enough to power the center's noncritical facilities.
Europe, Middle East, and Africa	We estimate that nearly 500 solar panels installed at HP's facilities in Bad Homburg and Böblingen, Germany, will generate approximately 170,000 kWh of electricity per year.

See more details about renewable energy purchasing in Data dashboard: environment on page 69.

[1] Goal for 2012: Double voluntary purchases of renewable energy to 8% of electricity use (in addition to the renewable energy available by default in the power grid).

Travel

Many HP employees travel as part of their work. In 2011, employee business travel generated 461,600 tonnes of carbon dioxide equivalent (CO_2e), a 3% increase from 2010. Emissions per employee decreased 4% over the same period, and have decreased by 51% since 2007. The majority of greenhouse gas (GHG) emissions from business travel are from commercial air travel (70%), followed by use of the HP auto fleet (27%) by our mobile sales force, and the HP air fleet (3%).

We work to reduce these emissions by promoting more efficient forms of transport such as smaller cars and rail travel instead of air, and encourage digital collaboration alternatives that avoid travel altogether. When employees book travel, we provide them with information about the emissions associated with their journey so that when multiple options are available, they can choose the one with the least environmental impact. HP's travel booking system advises employees on alternatives to nonessential travel such as Halo videoconferencing technology.[1] In 2011, employee use of Halo studios at HP facilities avoided an estimated 27,500 tonnes of CO_2e emissions from air and car travel that would have been generated had the meetings taken place in person.[2] See Environmental sustainability on page 19.

In 2011 we joined the Clinton Global Initiative's Fleets for Change and committed to reduce GHG emissions from our U.S. auto fleet by 10% by 2015, compared with 2010 on a per unit basis. We will work with Fleets for Change to refine our baseline emissions calculations and measure progress towards this goal by replacing high fuel consumption vehicles, reducing the distance traveled by employees, and encouraging lower emission practices.

We also launched an initiative in 2011 with Avis to reduce our U.S. rental car fuel consumption and related GHG emissions, with a targeted decrease of 15% per day driven by 2012, compared with 2011. Under the initiative, Avis will provide hybrid and other fuel-efficient vehicles certified by the U.S. Environmental Protection Agency's SmartWay program. We estimate the savings will cut fuel costs by $1 million USD.

See detailed travel data in Data dashboard: environment on page 69.

GHG emissions from employee business travel, 2007–2011 [tonnes CO_2e]

	2007	2008	2009	2010	2011
Total emissions	**464,400**	**510,500**	**365,800**	**448,800**	**461,600**
Commercial air travel	289,000	320,000	214,000	304,000	322,000
HP air fleet	14,300	21,600	13,400	12,500	13,200
HP auto fleet	161,100	168,900	138,400	132,300	126,400
Emissions per employee*	2.70	1.59	1.20	1.38	1.32

* Based on employee numbers as reported in past Global Citizenship Reports.

[1] HP divested its HP Visual Collaboration business, including Halo, to Polycom, Inc., in July 2011, but continues to provide these functionalities at our facilities.

[2] For air travel avoidance, an average of 1,609 miles each way per round trip (average of short-, medium-, and long-haul flights at HP), and a carbon dioxide (CO_2) footprint per mile of 199g CO_2e is used. Car travel to/from airport on both ends is also considered. Of the 35% of meetings that avoid travel, only 1.4 persons are assumed to avoid travel in each meeting. Usage depends on a company's travel and meeting policies.

Employee commuting

Although GHG emissions from employee commuting are not directly within HP's control, we offer programs that encourage employees to reduce them.

In the United States, HP enables employees to take advantage of WageWorks and use pretax income to pay for public transport costs. Carpooling options, such as our partnership with rideshare.org in the San Francisco Bay Area, are supported at U.S. locations and at other facilities around the world. Sites in various locations provide free shuttles from local public transportation.

We also support sustainable forms of transport such as cycling. At our Bristol site in the United Kingdom, for example, the local employee-led HP Sustainability Network chapter established a bicycle users group (BUG) that provides information, safe routes and maps, bike storage and loan facilities, discounts on bikes and equipment, and even a store where employees can buy or borrow equipment. Of the 900 people at the site, 180 are BUG members. Similar programs are available at numerous HP locations globally.

Many HP employees work outside the traditional office—at home, at customer facilities, or at shared offices where people are free to use any available desk—and often divide their work time between these locations. Giving employees flexibility on where they work reduces commutes to the office and can improve efficiency and work-life balance. When appropriate, we also encourage employees to travel to work at times that avoid peak commuting periods, thereby reducing their traveling time, associated stress, and GHG emissions.

Waste and recycling

In 2011, HP generated approximately 93,800 tonnes of waste. The vast majority, 92%, was nonhazardous consisting of solid waste such as paper, pallets, metals, and packaging. Our hazardous waste[1] consists mainly of liquid waste from our ink manufacturing facilities and batteries from our data centers.

These two types of waste require different approaches, but we aim to reduce the environmental impact of both through a policy of reduce, reuse, and recycle.

We recycle 82.2% of nonhazardous waste and aim to minimize the amount sent to landfill.

We reuse electronic equipment when appropriate, and otherwise we recycle it responsibly through the same programs that we make available to our customers.

We help ensure that hazardous waste is managed in an environmentally responsible manner though a combination of contractual commitments with, and internal and external audits of, waste disposal facilities and service providers who handle the waste on our behalf. These are carried out as part of the approval process for all new facilities and periodically for approved facilities.

Nonhazardous waste

HP generated approximately 86,400 tonnes of nonhazardous waste in 2011, a 14.5% decrease compared with 2010.[2] This was due to ongoing programs to reduce waste at the source as well as the elimination of some operations that generated high volumes of material.

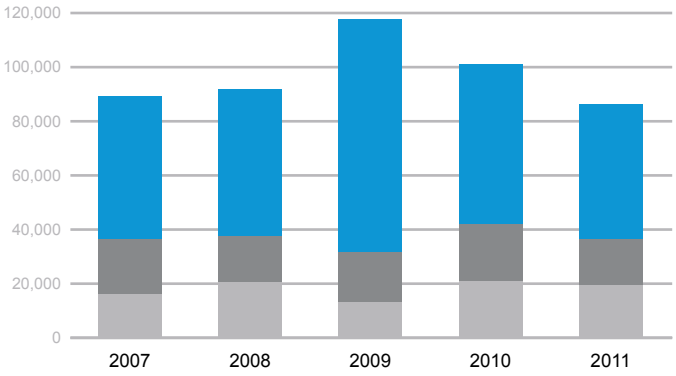
In 2011, we reused, recycled, or incinerated for energy 71,000 tonnes of nonhazardous waste, achieving a landfill diversion rate of 82.2%. This decrease from 84.9% in 2010 was due to the closure of some operations that had high diversion rates, including distribution and product completion facilities. Nonetheless, HP's total waste volume was down year over year, and the amount sent to landfill in 2011 remained roughly the same as in 2010, due to successful overall waste reduction efforts.

About one-third of nonhazardous waste generated in 2011 was paper. We are committed to reducing the amount of paper we use, and dispose of, to help decrease our environmental impact and save money. Read about our efforts to reduce paper use and purchase paper from sustainable sources.

[1] Hazardous waste classification varies by country. For ease of calculation, HP data includes some waste not considered hazardous in the country where it is generated.

[2] We have restated our 2010 nonhazardous waste data (from 79,800 tonnes as reported in the HP 2010 Global Citizenship Report) to ensure greater consistency with the methodology that we use to calculate other environmental data, including nonhazardous waste in prior years.

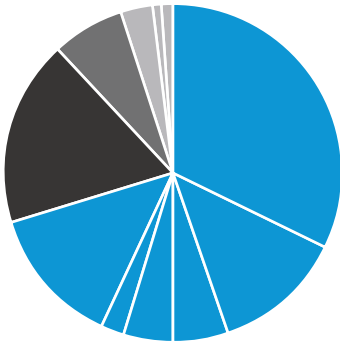
Nonhazardous waste, 2007–2011* [tonnes]



	2007	2008	2009	2010	2011
Americas	52,900	54,200	86,200	59,100	50,100
Europe, Middle East, and Africa	20,100	17,200	18,200	21,100	17,000
Asia Pacific and Japan	16,200	20,400	13,300	20,800	19,300
Total	**89,300**	**91,800**	**117,700**	**101,100**	**86,400**

* We have restated our 2010 nonhazardous waste data (from 79,800 tonnes as reported in the HP 2010 Global Citizenship Report) to ensure greater consistency with the methodology that we use to calculate other environmental data, including nonhazardous waste in prior years. Some segments do not add up to total due to rounding.

Nonhazardous waste composition, 2011* [percentage of total]



Recycled		Landfill	17.8%
Paper	32.2%	Incineration	6.8%
Pallets	12.5%	Reused	
Electronic equipment	5.5%	Pallets	3.1%
Packaging materials	4.5%	Packaging materials	0.7%
Metals	2.3%	Other	1.1%
Other	13.4%		

* Segments do not equal 100% due to rounding.

Recycling programs

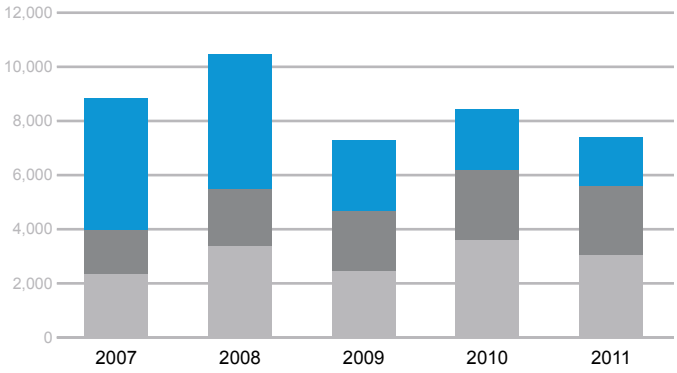
Our global recycling programs play a key role in supporting our efforts to reduce the amount of waste sent to landfill.

HP employees can recycle paper, plastics, and batteries at convenient recycling points within many of our buildings. We also recycle glass, plastic, and aluminum containers disposed of in our dining rooms and conference facilities. Individual sites often organize expanded recycling programs. At our Surya and Suhas Park facilities in Bangalore, India, for example, waste wood and paper is recycled to make stationery, batteries and waste oils are sent to locally approved recycling vendors, and obsolete electronic equipment is processed through an HP-approved vendor.

Hazardous waste

HP generated approximately 7,400 tonnes of hazardous waste in 2011, a 12% decrease compared with 2010. This is due to ongoing waste reduction programs at our manufacturing sites and fewer battery replacements at our data centers in 2011.

Hazardous waste, 2007–2011* [tonnes]



	2007	2008	2009	2010	2011
Americas	2,360	3,380	2,470	3,600	3,030
Europe, Middle East, and Africa	1,590	2,080	2,210	2,570	2,560
Asia Pacific and Japan	4,880	5,020	2,620	2,260	1,810
Total	**8,830**	**10,500**	**7,300**	**8,430**	**7,400**

* 2009 and 2010 data for the Europe, Middle East, and Africa region, and the global totals for those years, were restated to correct reporting errors in the 2009 and 2010 Global Citizenship Reports. Some segments do not add up to total due to rounding.

Water

In 2011, HP used just over 8 billion liters of water worldwide, predominantly for domestic use in buildings, cooling, and landscape irrigation. This represents a 1.4% decrease compared with 2010.

Although HP's operations are not water intensive, we recognize that freshwater consumption is a growing concern globally. We participate in the Carbon Disclosure Project's Water Disclosure Project to enhance our understanding of the issue and help provide a clearer picture of our corporate water use.

Some of our operations are located in water-stressed regions, making the availability and quality of freshwater an issue for our business, customers, and communities.

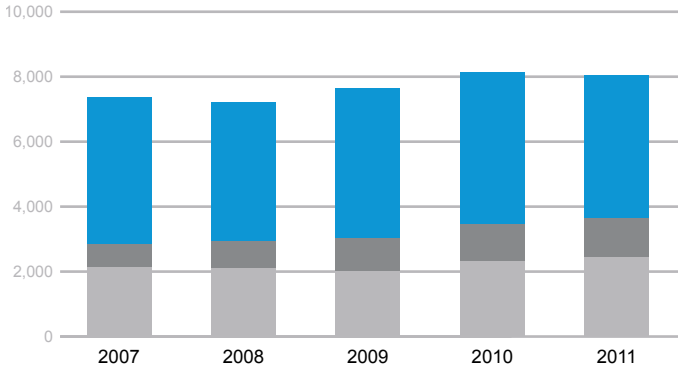
In 2011, HP developed a new water-use goal following an extensive analysis of our facilities' water impact. Our analysis took into account the availability of freshwater where a facility is located as well as the facility's usage, reflecting the fact that the impacts of water use are felt locally, not globally. We based our analysis on the Global Water Tool developed by the World Business Council for Sustainable Development (WBCSD) and data produced by the University of New Hampshire.

We plan to implement water-saving measures at all facilities that both of these sources identified as water stressed, as well as some sites identified by only one of the sources. In total, we plan to introduce 35 measures in 10 countries by 2015. Examples include flow restrictors, waterless urinals, and rainwater harvesting. We expect these measures to reduce freshwater use across those sites by 77.7 million liters, equivalent to 3% of 2011 consumption at those locations.[1] Large reductions may not be possible at all the sites identified, as many have already made considerable savings or are office-based locations with limited options for decreasing water use.

HP recognizes that our supply chain also has a significant amount of water usage, so in the coming years we will be working to understand the issue and identify possible actions to reduce our total water footprint.

[1] Based on http://water.epa.gov/learn/kids/drinkingwater/water_trivia_facts.cfm.

Water consumption, 2007–2011* [million liters]



	2007	2008	2009	2010	2011
Americas	4,518	4,297	4,615	4,707	4,395
Europe, Middle East, and Africa	713	831	1,001	1,124	1,192
Asia Pacific and Japan	2,128	2,096	2,031	2,324	2,454
Total	**7,359**	**7,225**	**7,647**	**8,155**	**8,041**

* 2010 water consumption data is revised to reflect updates to reported data. Some segments do not add up to total due to rounding.

Many facilities, including those in water-stressed regions, are taking steps to cut water use or use alternatives to freshwater sources. Since 2007, HP's facilities in Singapore have been using "New Water" to reduce demand on freshwater. New Water is treated wastewater purified using microfiltration, reverse osmosis, and ultraviolet treatment, as well as conventional treatment processes. The water is potable but is mostly used by industries requiring high purity water.

New Water accounts for more than two-thirds of the facilities' annual water consumption and is 20% cheaper than standard potable water, helping us to save more than $3.5 million USD since 2007.

Wastewater

Wastewater from our manufacturing operations is not a significant environmental issue for HP. Office wastewater is discharged under local regulations to local treatment facilities.

In 2011, our seven imaging and printing product manufacturing facilities generated 1.296 billion liters of manufacturing wastewater. These effluents are discharged under a permit, and treated at a locally owned and operated treatment plant. We have procedures in place designed to prevent unauthorized discharges of chemicals to wastewater systems, and ensure we do not discharge wastewater directly from HP operations to surface water or groundwater.

See performance data, including regional breakdown, in Data dashboard: environment on page 69.

"In using the Global Water Tool to prioritize water-saving measures at its facilities worldwide, HP has taken appropriate initial steps towards implementing a risk-based water management strategy. It is also reassuring that HP is using the tool to evaluate water risk in its supply chain. HP's efforts should be evaluated in terms of its success in reducing the company's exposure to water risk, and improving water security for all users in the regions where it operates."

—Charlie Iceland, Senior Associate, World Resources Institute

Sustainable building design

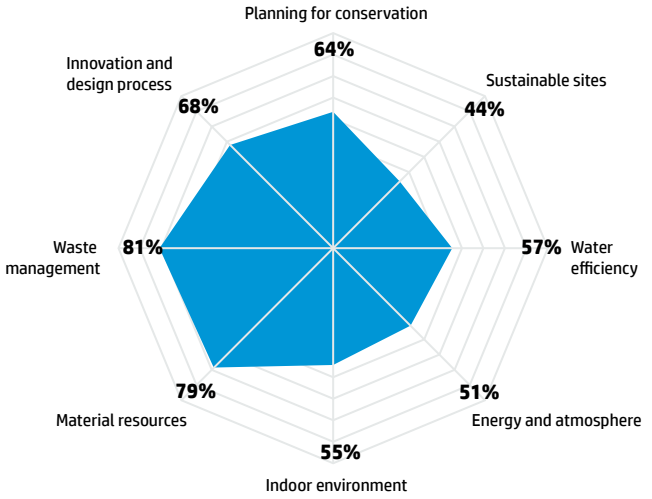
In 2011 HP completed its 3-year Global Workplace Initiative that aimed to cut costs, energy use, and water consumption by reducing the amount of space we occupy. We continue to reduce the environmental footprint of our real estate by using our offices more efficiently and improving the design of new and existing buildings. For example:

- We consolidated five buildings into one at Ojima, Japan. The new facility employs sustainable design features such as increased use of natural ventilation and lighting, wastewater and rain water recycling, water-efficient landscaping, and recycled and locally sourced building materials.
- Energy-efficient LED lighting at several facilities in India and Singapore will contribute to estimated savings of more than 2 million kilowatt hours (kWh) in electricity usage annually.

As well as saving energy, features such as increased use of natural light help to create comfortable and productive workplaces and can help improve our facilities' appearance. Consolidating office space has the additional benefit of freeing up office buildings for potential use by other organizations, so overall, fewer offices need to be constructed.

Our custom sustainable building design checklist provides guidance for project managers when planning office improvements. It covers a wide range of sustainable design features, such as energy use, materials, waste management, and water efficiency, and helps identify cost-effective solutions for each area. A scorecard completed at the end of each project notes the building's performance against the checklist and helps identify areas for further enhancement.

Sustainable building design progress summary
(Percentage of 27 projects tracked addressing each scorecard element through 2011)



In some cases, we apply for U.S. Green Building Council LEED® certification. In 2011, three HP facilities were certified by LEED, including our Hockley data center in Texas, United States, and our Finnish headquarters at Espoo, both of which achieved Gold-level certification. This brings the total number of HP LEED certified facilities to four. Three additional facilities are due to achieve LEED certification in 2012, including those in Kiryat Gat (Certified) in Israel, Palo Alto (Platinum) and Sunnyvale (Gold) in California, United States.

Toxics release inventory

Five HP operations worldwide that are responsible for the manufacture of imaging and printing products require the use of several chemicals listed on the U.S. Environmental Protection Agency (EPA) Toxics Release Inventory (TRI). Together, those sites account for all of HP's reportable TRI releases. These releases continue to decrease as we eliminate or scale down the HP processes that use those chemicals due to changes in our business operations.

Disposition by type of TRI material, 2008–2010 [tonnes]*

Chemical	Emitted to air				Discharged to water (to sewer/off-site treatment facility)				Shipped off-site for recycle/energy recovery				Shipped off-site for treatment or disposal				Total			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
N-methyl pyrrol-idone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	451.5	357.6	268.1	259.5	0.0	0.0	0.0	0.0	**451.5**	**357.6**	**268.1**	**259.5**
Nitric acid	0.5	0.5	0.1	0.1	0.0	0.0	0.0	0.0	9.6	0.0	0.0	0.0	21.9	5.9	11.3	4.8	**31.9**	**6.4**	**11.4**	**4.8**
Nitrates	0.0	0.0	0.0	0.0	12.3	9.3	6.1	6.9	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	**12.4**	**9.3**	**6.1**	**6.9**
Lead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	8.3	0.9	0.9	0.0	0.0	0.0	0.0	**7.1**	**8.3**	**0.9**	**0.9**
Xylene	5.3	6.5	7.2	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	12.7	14.0	17.4	**17.2**	**19.3**	**21.2**	**26.3**
Glycol ethers**	NA	9.4	18.8	9.3	NA	0.0	0.0	0.0	NA	0.0	0.0	0.0	NA	41.8	80.8	26.9	**NA**	**51.2**	**99.6**	**36.3**
All others	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	**0.7**	**0.2**	**0.0**	**0.0**
Total	**5.8**	**16.7**	**26.1**	**18.3**	**12.3**	**9.3**	**6.1**	**6.9**	**468.1**	**365.8**	**269.0**	**260.5**	**34.5**	**60.5**	**106.1**	**49.1**	**520.8**	**452.0**	**407.3**	**334.8**

* The substances with global totals greater than 1 tonne are shown. TRI reports are due to the U.S. EPA July 1 each year, so the most recently completed reporting year is 2010.

** Glycol ether data for 2009 have been restated to correct a unit conversion error. Totals for 2009 reflect the corrected data.

Ozone-depleting substances

HP facilities use ozone-depleting substances (ODSs) in cooling and air conditioning systems. Although these systems are sealed, leaks during operation and maintenance could result in emissions. We continue to replace chlorofluorocarbons (CFCs) in our systems with hydrofluorocarbons (HFCs). Although HFCs are greenhouse gases, they do not deplete the ozone layer. We are also starting to replace HFC-based cooling systems with HFC-free equivalents when they reach the end of their operational lives. These are not ODSs and have no or very low global warming potential.

We do not measure ODS emissions but rather estimate leakage using guidance from the Intergovernmental Panel on Climate Change.[1]

See performance data, including regional breakdown, in Data dashboard: environment on page 69.

[1] To estimate these emissions, HP uses EPA Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance May 2008, in conjunction with global warming potential values from www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html.

Remediation

Where needed, HP conducts or contributes to soil and groundwater remediation to clean up contaminated sites.

This includes remediation at:

- Eighteen sites where chemical releases from historical HP or predecessor operations occurred
- Six sites where HP's wastes were managed by third parties and releases occurred

We apply the risk prevention and management procedures of our environmental, health, and safety (EHS) management system to help prevent and respond to chemical spills at HP facilities. One spill at an HP facility occurred in 2011 that required soil remediation on HP property. We reported the incident promptly to the local environmental authority and initiated clean-up under its oversight.

Biodiversity

HP's direct operational impact on biodiversity is minimal because we build very few facilities relative to our size and growth. When we do build, we often use previously developed land, which reduces our expansion into undeveloped areas.

However, we have an indirect impact on biodiversity through forestry because we sell and use significant amounts of paper. Our Environmentally Preferable Paper Policy sets out our standards for buying, selling, and using paper and paper-based packaging. We increasingly source paper from suppliers that demonstrate sustainable forestry and responsible manufacturing practices, and we strive to reduce the amount of paper we use in our operations and recycle paper when possible. Read more about paper use at HP.

HP list of major operations

More than 100,000 square meters	
Americas	
Boise, ID*	United States
Colorado Springs, CO	United States
Corvallis, OR*	United States
Cupertino, CA	United States
Houston, TX*	United States
Palo Alto, CA	United States
Plano, TX	United States
Roseville, CA	United States
San Bernardino, CA	
Europe, Middle East, and Africa	
Dublin Mfg*	Ireland

50,000–100,000 square meters	
Americas	
Aguadilla, PR*	Puerto Rico
Ft. Collins, CO	United States
Ft. Worth, TX	United States
Marlborough, MA	United States
Pontiac, MI	United States
San Diego, CA*	United States
Sandston, VA	United States
Sandston, VA	United States
Woodland, CA	United States

* Site/operation included in HP's global ISO 14001 certificate. In some cases, multiple locations in close proximity are considered one "site" for the purposes of the certification.

50,000–100,000 square meters	
Asia Pacific and Japan	
Bangalore	India
Bangalore HPGS	India
Singapore DRD*,***	Singapore
Singapore SGP	Singapore
Europe, Middle East, and Africa	
Grenoble	France
Böblingen	Germany
Erskine**,***	United Kingdom

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** ISO 14001 certified but not part of the global certificate.

*** OHSAS 18001 certified site.

25,001–50,000 square meters	
Americas	
Sao Bernardo do Campo	Brazil
Markham	Canada
Mississauga	Canada
Mississauga—Canadian HQ	Canada
Heredia	Costa Rica
Guadalajara	Mexico
Alpharetta, GA	United States
Andover, MA	United States
Auburn Hills, MI	United States
Austin, TX	United States
Des Moines, IA	United States
Herndon, VA	United States
Hockley, TX	United States
Houston, TX	United States
Indianapolis, IN	United States

25,001–50,000 square meters	
Irving, TX	United States
LaVergne, TN	United States
Louisville, CO	United States
Mountain View, CA	United States
Salt Lake City, UT	United States
Satellite Boulevard Data Center, GA	United States
Sunnyvale, CA	United States
Sunnyvale Palm, CA**,***	United States
Tulsa, OK	United States
Urbandale, IA	United States
Vancouver, WA	United States
Asia Pacific and Japan	
Tokyo—Japan HQ	Japan
Seoul	Republic of Korea
Cyberjaya HP Global Center (CJO)	Malaysia
Taguig City	Philippines
Singapore	Singapore
Taipei	Taiwan
Europe, Middle East, and Africa	
Sofia	Bulgaria
Rüsselsheim	Germany
Rehovot*	Israel
Amersfoort	Netherlands
Barcelona Sant Cugat*	Spain
Sant Cugat del Valles	Spain
Bucharest**,***	Romania
Billingham	United Kingdom
Bristol	United Kingdom

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