Facilities Report

2012 Environmental Update

Facilities, 2%

Product, 98%

Apple carefully manages the environmental impact of our facilities, though they represent only 2 percent of our assessed GHG emissions. The remainder of the GHG emissions come from the production, transport, use, and recycling of products.

Apple and the Environment

Since 2006, Apple has reported our environmental impact comprehensively by assessing the full life-cycle greenhouse gas (GHG) emissions associated with every product shipped. We know that as much as 98 percent of our total emissions comes from the greenhouse gas emitted from the production, transport, use, and recycling of products.

Our corporate facilities represent 2 percent of our total GHG emissions. Consistent with our industry leadership role, Apple carefully manages the environmental impact of everyday operations around the globe and we make significant investments in energy efficiency and clean-technology solutions. Our environmental, health, and safety (EHS) management system helps ensure ongoing compliance with regulations and company standards across all Apple facilities.

This report documents the environmental impact of Apple's worldwide facilities, including Apple Retail Stores, corporate R&D facilities, and operations and data centers; and it highlights the activities under way to reduce energy and water consumption and produce less waste.

The Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (G3.1) were considered during the preparation of this report. To find out more about the impact of our products, review Apple's Product Environmental Reports at www.apple.com/environment/reports.

Electricity Usage (MWh/Employee)
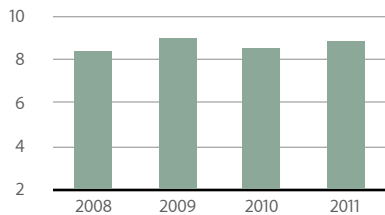
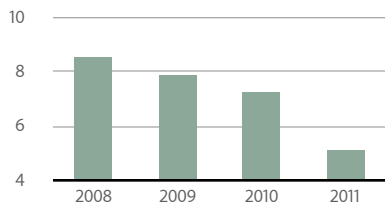### Natural Gas Usage (Therms/Employee)
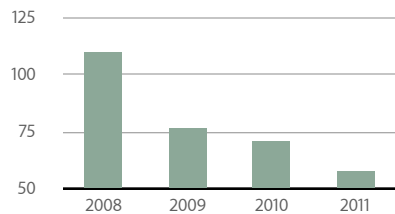
Electricity and natural gas data is compiled from utility consumption data for sites owned and leased by Apple.[1]

GHG Emissions (Metric Tons CO_2e/Employee)

Emissions data includes natural gas and electricity consumed at Apple-owned and leased facilities worldwide,[2] in addition to employee commute, fleet vehicles, and air travel.

Managing Energy at Apple Facilities

We continue to work toward the goal of achieving a net zero energy program for our corporate facilities worldwide. For more than 10 years, Apple has purchased renewable energy for our facilities around the globe. Our facilities located in Cork, Ireland; Munich, Germany; Austin, Texas; and Elk Grove, California are currently using 100 percent renewable energy resources.[3]

In 2011, we realized dramatic reductions in energy use based on our net zero goal. To achieve this goal we use a tiered approach—starting with energy efficiency, followed by an aggressive use of onsite renewable energy generation where space and operational constraints allow, and, finally, through industry-leading partnerships with utilities and renewable energy providers for grid-purchased renewable energy.

The first step is to make sure our facilities are as energy efficient as possible. Reduced energy consumption leads to reduced environmental impact: The cleanest energy is that which is never used. Apple optimizes efficiency in existing facilities and designs new facilities from the ground up to be as energy efficient as possible.

The second tier of our energy strategy focuses on generating our own clean, renewable energy onsite at our facilities. To date, our renewable energy generation has focused on using photovoltaics, fuel cells, and other appropriate technologies. Onsite generation allows Apple to meet our energy needs within our own footprint, where possible, while also minimizing grid dependence and reducing environmental impact.

The third tier of our energy strategy is to meet our remaining energy needs with clean, renewable energy generated offsite. Offsite generation is needed because of physical space limitations for onsite generation and because the variable energy demands of our facilities prohibit 100 percent onsite generation. The benefits of supporting offsite generation include renewable energy development in locations where renewable resources are plentiful (for example, wind corridors, solar hot spots) and expanding the renewable energy available from local energy suppliers.
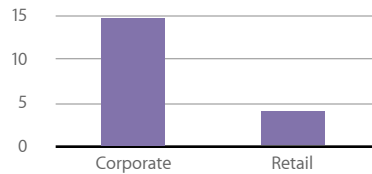
Apple pursues grid-purchased renewable energy from newer projects to provide energy developers with incentives to create more renewable energy resources. We also favor projects located within the same state or grid region as our facilities, to positively influence local renewable energy development.

Taken together, this three-tier energy strategy is moving Apple closer to reaching our net zero goal for our corporate facilities, and in turn helps us to reduce our GHG emissions and our corporate carbon footprint.
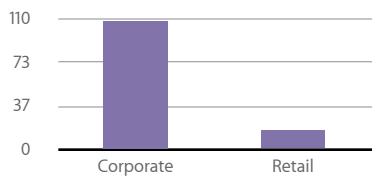
Cupertino, California, corporate facilities

In 2011, we achieved 5 million kilowatt-hours (kWh) in energy savings through the energy efficiency and conservation activities at several of our Cupertino facilities. We will continue to expand this program to include:

- Performing campuswide energy audits and retro-commissioning projects.
- Installing induction-based lighting fixtures with bilevel controls in parking areas.
- Installing and optimizing intelligent control systems to optimize the performance of ventilation and cooling systems against ambient weather conditions.
- Retrofitting buildings with special reflective window and roof coatings to protect internal spaces from the warming effects of the sun, thereby reducing the demand for additional cooling.
- Using energy-efficient Apple computers in our facilities, which all far exceed the strict requirements of the ENERGY STAR rating system (used in Cupertino and in all of our worldwide facilities).

The installation of a 500-kilowatt biogas-powered fuel cell project that supplies clean electricity to our Cupertino facilities helps us avoid more than 1.2 million kilograms of CO_2 equivalent (CO_2e) emissions.

We secured regulatory authority to supplement our energy needs in Cupertino and the Santa Clara Valley with offsite, grid-purchased renewable energy, which was not previously possible. This paves the way to achieve our goal of powering these facilities with 100 percent renewable energy.

Maiden, North Carolina, data center

The 2011 commissioning of our new data center in Maiden, North Carolina, demonstrates our commitment to reduce the environmental impact of our facilities through energy-efficient, green building design. The facility is exceptionally energy efficient and has earned the coveted LEED Platinum certification from the U.S. Green Building Council. We know of no other data center of comparable size that has achieved this level of LEED certification.

2011 Energy Consumption and GHG Emissions

Corporate is defined as all non–retail store buildings, including offices and data centers. Retail is defined as all retail stores.
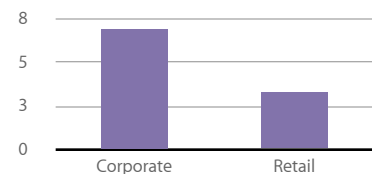
Electricity Usage (MWh/Employee)

	Corporate	Retail
15		
10		
5		
0		

Natural Gas Usage (Therms/Employee)

	Corporate	Retail
110		
73		
37		
0		

Electricity and natural gas data is compiled from utility consumption data for sites owned and leased by Apple.[1]

GHG Emissions (Metric Tons CO_2e/Employee)

	Corporate	Retail
8		
5		
3		
0		

Emissions data includes natural gas and electricity consumed at Apple-owned and leased facilities worldwide,[2] in addition to employee commute, fleet vehicles, and air travel.

The energy-efficient design elements of the Maiden facility include:

- A chilled water storage system to improve chiller efficiency by transferring 10,400 kWh of electricity consumption from peak to off-peak hours each day.

- Use of "free" outside air cooling through a waterside economizer operation during night and cool-weather hours, which, along with water storage, allows the chillers to be turned off more than 75 percent of the time.

- Extreme precision in managing cooling distribution for cold-air containment pods, with variable-speed fans controlled to exactly match air flow to server requirements from moment to moment.

- Power distributed at higher voltages, which increases efficiency by reducing power loss.

- White cool-roof design to provide maximum solar reflectivity.

- High-efficiency LED lighting combined with motion sensors.

- Real-time power monitoring and analytics during operations.

- Construction processes that utilized 14 percent recycled materials, diverted 93 percent of construction waste from landfills, and sourced 41 percent of purchased materials within 500 miles of the site.

To meet the energy needs of the Maiden facility with high-percentage renewable energy mix, we have embarked on an industry-leading renewable energy program. Major leaps toward this goal are under way:

- Apple is building the nation's largest end user–owned, onsite solar array on the land surrounding the data center. When completed, this 100-acre, 20-megawatt facility will supply 42 million kWh of clean, renewable energy annually.

- Apple is building a fuel cell installation that, when online later in 2012, will be the largest non-utility fuel cell installation operating anywhere in the country. This 5-megawatt facility, located directly adjacent to the data center, will be powered by 100 percent biogas, and provide more than 40 million kWh of 24x7 baseload renewable energy annually.

Apple is committed to pursuing energy-efficient growth by increasing our renewable energy participation to match the growing needs of our data center—through our own projects as well as partnerships with utilities and renewable energy providers.

Other worldwide Apple facilities

Our energy strategy has been in place for many years in Apple facilities around the world. For over 10 years, Apple has purchased renewable energy for our facilities located in Cork, Ireland; Munich, Germany; Austin, Texas; and Elk Grove, California. Today these facilities are already powered with 100 percent renewable energy resources.[3] Together, these projects converted more than 54 million kWh worth of consumption per annum to renewable sources, which was 11 percent of Apple's worldwide facility-related electricity consumption.

Following are some examples:

- In our Cork facility, a solar thermal water heater displaces almost 100 percent of water-heating needs for the onsite cafeteria. Because of this project's success, we are evaluating the applicability of this type of onsite renewable energy use at other Apple facilities.

- Bilevel-controlled LED and induction lighting systems are installed in the parking areas at our facilities in Elk Grove.

- Apple Retail Stores have implemented LED lighting technologies to illuminate our signs and light fixtures.

Energy Consumption and Renewable Energy Disclosure for 2011

Managing electricity and natural gas consumption at Apple facilities is an integral part of our process to reduce our carbon emissions footprint. Across our worldwide facilities in 2011, energy consumption included 493 million kWh of electricity and 3 million therms of natural gas. For our global portfolio, approximately 30 million kilograms of CO_2e emissions were avoided through the use of renewable energy programs in fiscal 2011.

Applicable GRI indexes: EN3, EN4, EN5, EN6, EN16, EN17, EN18

**GHG Emissions—Employee Travel
(Metric Tons CO₂e/Employee)**
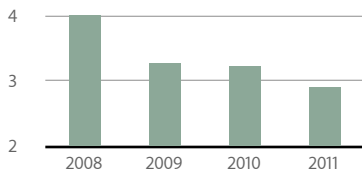
Based on annual distances covered by Apple's auto fleet, worldwide air travel, and the commute miles traveled by Apple employees worldwide assuming a 2-liter gas engine auto for auto commuters.[4]

Water Usage (m³/Employee)

Water usage data is compiled from utility consumption data for sites owned and leased by Apple.

Transportation

Apple has established commuter transit programs for each facility to minimize the environmental impact of home-to-work travel. Our commute programs reduce traffic, smog, and CO_2e. The Apple U.S. Commute Alternatives program provides incentives for biking, using public transportation, and reducing the use of single-occupancy vehicles. For example, Apple provides a transit subsidy for all U.S. employees, up to US$100 per month, and encourages carpooling between commute locations.

At our largest facility, located in Cupertino, California, Apple has significantly reduced single-occupancy vehicle use by providing employees with numerous shuttle options, including free bus service from train stations as well as bus service from local cities. Each day, over 1100 employees take advantage of our free biodiesel commute buses. Furthermore, electric vehicle charging stations are available, free of charge, to our Cupertino employees. In total, more than 10,000 employees participated in our Commute Alternatives program in fiscal 2011.

Employees have access to a shared bike program, car-share vehicles, and a network of intercampus shuttles to travel between buildings at our Cupertino campus. Two months after the shared bike program began in July 2011, over 2000 employees were registered and using the bikes.

More than half of Apple's fleet vehicles are hybrids and we continue to source them where available. Our European fleet program also sets strict emissions standards of less than 165g CO_2e/km for every vehicle. This helps Apple maintain a low environmental impact as we serve our customers around the world.

Air travel by Apple employees generates a significant portion of the company's yearly facilities-related GHG emissions. To address this, we encourage teleconferencing and have installed equipment at all of our major facilities around the world.

In fiscal 2011, total emissions from employee commute, fleet vehicles, and air travel were 161,000 metric tons of CO_2e.[5]

Applicable GRI indexes: EN7, EN29

Water Use

Apple operations are not water intensive. Our water use is typically for sanitary and landscape purposes in Apple facilities worldwide.

Apple installed sophisticated irrigation systems at facilities in Austin, Texas, and Cupertino, California, that monitor local weather conditions and soil moisture, then adjust the landscape irrigation schedule to avoid unnecessary watering. This system reduced landscape water consumption by 40 percent. Furthermore, Apple's Sacramento and Cupertino sites use xeriscaping (drought-tolerant landscaping) and drip irrigation to reduce water requirements and usage.
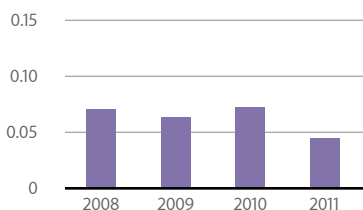
At an Apple facility in Singapore, we modified the bathroom faucets and other fixtures and reduced water consumption for the entire building by 40 percent. Similar modifications are now under way at facilities in Cupertino.

Our Maiden, North Carolina, data center employs an innovative cooling system that reuses the same water 35 times, resulting in a 20 percent reduction in overall water consumption. The data center also uses a rainwater-supplied system for onsite landscape irrigation, further reducing overall water consumption.
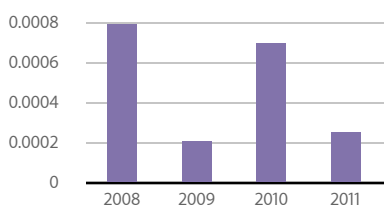
In fiscal 2011, Apple used 1 million cubic meters of water total. Apple will continue to look at ways to reduce our consumption of water.

Applicable GRI indexes: EN8, EN10

Solid Waste (Metric Tons/Employee)

	2008	2009	2010	2011
Value	0.07	0.063	0.072	0.045

(Chart: y-axis 0, 0.05, 0.10, 0.15)

Hazardous Waste (Metric Tons/Employee)

	2008	2009	2010	2011
Value	0.0008	0.00021	0.0007	0.00025

(Chart: y-axis 0, 0.0002, 0.0004, 0.0006, 0.0008)

Recycled Material (Metric Tons/Employee)

	2008	2009	2010	2011
Value	0.12	0.13	0.093	0.105

(Chart: y-axis 0, 0.05, 0.10, 0.15)

Waste and recycling data is based on all Apple sites, including Apple Retail Stores.

Waste and Recycling

Apple does not generate a significant amount of solid or hazardous waste from our business operations. To minimize the environmental impact of the small amount of waste we produce, we've created robust recycling and composting programs.

In 2007, Apple's Cupertino facilities established a composting program in the company cafeteria to divert food waste from landfills. As part of the composting program, a majority of our disposable tableware and containers were transitioned to biodegradable or compostable alternatives. This program, developed and promoted by employees, successfully diverts what would otherwise be solid waste toward a new environmentally beneficial use. The food waste is collected and processed by a professional vendor, who makes the compost available to commercial farms and the public. Since 2007, we've diverted more than 800 metric tons of waste from landfills through composting.

Comprehensive worldwide recycling programs include separated bins. Up to five different types of bins are placed at each site: plastic, glass, paper, compost, and general trash. This allows us to efficiently sort, measure, and prepare the recyclable goods for use in their next life.

Apple has a robust hazardous waste program for the small amount of waste that we produce (mostly in research and development). We ensure that any materials that may pose a risk to the environment are disposed of in the proper manner.

In 2011, the amount of solid waste created by Apple was 2400 metric tons total. Hazardous waste generated was 14 metric tons total. The amount of material recycled as part of everyday operations was 5700 metric tons total.

In addition to the recycling of solid waste created in everyday operations, Apple offers and participates in various product take-back and recycling programs in 95 percent of the regions in which Apple products are sold. For more more information on how to take advantage of these recycling programs, visit www.apple.com/environment/recycling.

Applicable GRI indexes: EN2, EN22, EN24

Environmental, Health, and Safety Policy Statement

Apple is committed to protecting the environment, health, and safety of our employees, customers, and the global communities in which the company operates.

We recognize that by integrating sound EHS management practices into all aspects of our business, we can offer technologically innovative products and services while conserving and enhancing resources for future generations.

Apple strives for continuous improvement in our EHS management systems and in the environmental quality of our products, processes, and services.

Guiding principles

Meet or exceed all applicable environmental, health, and safety requirements. We will evaluate our EHS performance by monitoring ongoing performance results and conducting periodic management reviews.

Adopt our own standards to protect human health and the environment when laws and regulations do not provide adequate controls.

Support and promote sound scientific principles and fiscally responsible public policies that enhance environmental quality, health, and safety.

Advocate the adoption of prudent environmental, health, and safety principles and practices by our contractors, vendors, and suppliers.

Communicate environmental, health, and safety policy and programs to Apple employees and stakeholders.

Design, manage, and operate our facilities to maximize safety, promote energy efficiency, and protect the environment.

Strive to create products that are safe in their intended use, conserve energy and materials, and prevent pollution throughout the product life cycle, including design, manufacture, use, and end-of-life management.

Make sure that all employees are aware of their roles and responsibilities in fulfilling and sustaining Apple's environmental, health, and safety management systems and policy.

References

The Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (G3.1): www.globalreporting.org/reporting/latest-guidelines/g3-1-guidelines/Pages/default.aspx

U.S. Green Building Council (USGBC) LEED certification: www.usgbc.org/DisplayPage.aspx?CategoryID=19

More information on Austin green energy: www.austinenergy.com/index.htm

Electricity consumption: www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set15/2003excel/c20a.xls

Natural gas consumption: www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set16/2003excel/c30a.xls

Apple facilities' emissions are third-party verified by Bureau Veritas (BV), a global leader in conformity assessment and certification services. Our reasonable assurance is one of the highest in the verification industry. It is the opinion of BV that the information in the GHG emissions report is accurate and reliable.

[1]Over 80 percent of the data for electricity and gas consumption is from actual use data. For leased sites where actual use is not tracked by Apple, consumption figures are estimated using the energy intensity calculation tool provided by the U.S. Department of Energy. Climate zone comparisons were used to model non–U.S. site consumption patterns against the DOE calculation tool.

[2]Differences in the GHG emissions of local power grids are accounted for in the assessment.

[3]Apple purchases renewable energy under contract and does not use or purchase biologically sequestered carbon.

[4]Emissions from employee air travel are calculated from flights taken by all employees worldwide. Aircraft emissions are assessed in accordance with distance conversion factors provided by the World Resources Institute and the U.S. Environmental Protection Agency Climate Leaders Guidance.

[5]One metric ton equals 2205 pounds.

For More Information

For more details about Apple's environmental practices, visit www.apple.com/environment.