Environmental Responsibility Report

2014 Progress Report, Covering FY2013

Contents

Page 3 **Environmental Responsibility at Apple**

Page 4 **Climate Change**
Facilities
Product usage
Transportation
Recycling

Page 15 **Greener Materials**
Removing toxins
Product testing

Page 17 **Finite Resources**
Conserving materials
Recycling

Page 20 **Appendix A**
Environmental Health and Safety Policy Statement

Page 21 **Appendix B**
Carbon Assurance and Review Statements

Page 29 **Appendix C**
References

Environmental Responsibility at Apple

We strive to create products that are the best they can be in every way. Our passion for innovation is also reflected in how we think about environmental responsibility. Our goal is to make not just the best products in the world, but the best products for the world.

Apple's 2014 Environmental Responsibility Report, covering fiscal year 2013, highlights the progress we've made toward that goal. We have set three priorities for our work where we believe Apple can make the most impact going forward:

- Reduce our impact on climate change by using renewable energy sources and driving energy efficiency in our products.
- Pioneer the use of greener materials in our products and processes.
- Conserve precious resources so we all can thrive.

This report details how we are approaching each of these priorities, and highlights the progress we have made to date.

For starters, every one of our data centers is powered entirely by clean sources such as solar, wind, and geothermal energy. So whenever you download a song, update an app, or ask Siri a question, the energy Apple uses is provided by nature.

Of course, the cleanest energy is the energy you never use. That's why we've reduced the average total power consumed by Apple products by 57 percent since 2008—helping reduce our customers' electricity bills and carbon emissions. And each one of our products far exceeds the strict energy efficiency guidelines set by ENERGY STAR.

We've led the industry in removing many harmful toxins from our products, such as PVC, brominated flame retardants, and phthalates. Many toxins are restricted not only in the products themselves but also in the manufacturing processes, because we are committed to providing safe working conditions for the people who make our products.

And we've recycled more than 421 million pounds of electronic waste. Every Apple Retail Store in the world will now take back Apple products for free and recycle them responsibly. We believe we must be accountable for every Apple product at every stage of its use.

Our work is led by Lisa Jackson, Apple's Vice President of Environmental Initiatives, reporting directly to CEO Tim Cook. The Office of Environmental Initiatives works with teams across Apple to set strategy, engage stakeholders, and communicate progress. Our integrated approach means that decisions about environmental issues are reviewed at the highest levels of the company.

But we know we have a long way to go, and a lot of work ahead of us. And we are committed to increasing openness in our sustainability work and welcome you to join us on our journey.

Climate Change

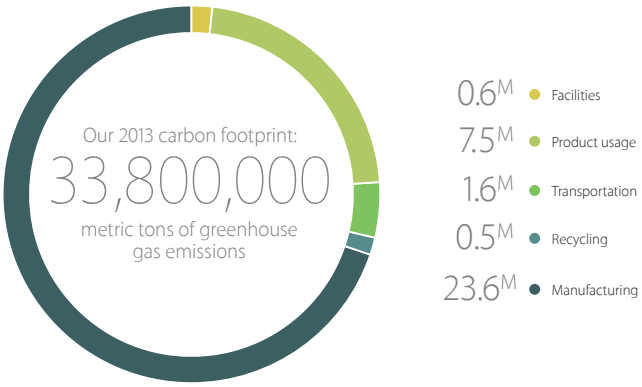
Our Maiden, North Carolina, data center has the nation's largest privately owned onsite solar array.

We believe climate change is real. And that it's a real problem. As a global company that makes some of the most popular products in the world, we know we use a lot of energy and material, which in turn generates greenhouse gas emissions that contribute to climate change. That's the part of the problem we can help solve. We've found ways to use energy and materials more efficiently in our facilities, to get energy from cleaner sources, and to make some of the world's most energy-efficient electronic products. We're still the only company in our industry whose data centers are powered by 100 percent renewable energy and whose entire product line not only meets but far exceeds strict ENERGY STAR guidelines. And while we have a long way to go, our efforts are working—even though we're manufacturing and shipping more products, our carbon emissions per product are dropping.

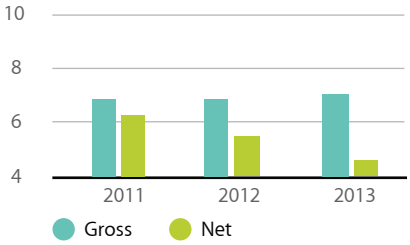
It takes an enormous amount of energy to design, assemble, ship, and use hundreds of millions of products all over the world. A portion of that energy comes from burning fossil fuels, which creates carbon emissions. Those emissions make up our carbon footprint—our share of the climate change problem. We're striving to reduce that footprint, and we're making great progress. But there's still a lot of work to be done.

Why we measure our carbon footprint the way we do.

We take a rigorous approach to measuring our environmental impact. In fact, we know of no other company in our industry that goes so far in measuring, verifying, and disclosing its carbon emissions. Instead of reporting just the carbon footprint of the facilities we own, we also include the carbon footprint of our supply chain. And we don't use generalized industry-standard measurement models—we use a comprehensive product life cycle analysis that measures the carbon footprint throughout the entire life of our products, so everything is meticulously accounted for. That means adding up emissions generated from the manufacturing, transportation, use, and recycling of our products, as well as emissions generated by all of our facilities. And while we're constantly improving, we're also constantly reporting—even when our numbers aren't as good as we'd like them to be.



GHG Emissions (Metric Tons CO_2e/Employee)

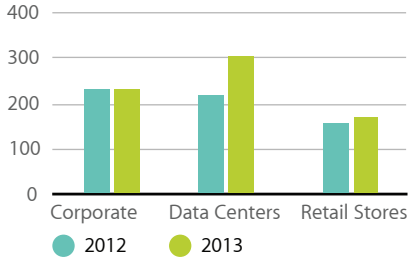


Emissions data includes natural gas and electricity consumed at Apple-owned and leased facilities worldwide, in addition to employee commute, fleet vehicles, and business travel.

As a result of Apple's investment in renewable energy, we've reduced our net emissions significantly.

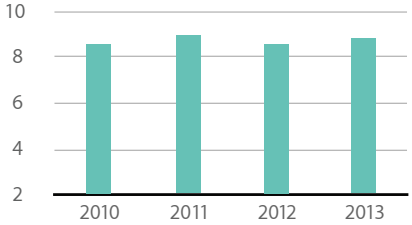
Apple accounts for GHG emissions from electricity using both default emissions and net emissions, so we can see the impact of our investment and recognize our contribution to the connected grid.

Electricity Usage By Business Unit (M kWh)



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

Electricity Usage (MWh/Employee)



How our carbon footprint informs our thinking.

We're always trying to improve the way we conduct our greenhouse gas life cycle analysis. And when our assessments reveal a material, process, or system that's making a significant negative impact on our carbon footprint, we reexamine how we design that product, process, or facility. For example, we were using industry-standard methods to account for our emissions from aluminum, but because we use aluminum in so many of our products, we decided to undertake an extensive survey of our aluminum suppliers. Our study revealed that emissions associated with manufacturing our aluminum housings were nearly four times higher than we believed, so we've updated our 2013 life cycle analysis data to be more accurate. As a result, the carbon emissions we reported for 2013 are 9 percent higher than the carbon emissions we reported for 2012. However, this increase is due to previously underestimating our emissions, not because our emissions increased. In fact, when we recalculated the 2012 data using the new methodology, our carbon emissions actually dropped by 3 percent year over year. We're committed to continuing to reduce our greenhouse gas emissions and using our life cycle analysis to drive that change.

Facilities

An energy-efficient facility is good, and a 100 percent renewable energy facility is better.

The cleanest energy is the energy you never use, so we're designing new buildings and updating existing ones to use as little electricity as possible. For the energy we do need, our goal is to power all Apple corporate offices, retail stores, and data centers entirely with energy from renewable sources—solar, wind, micro-hydro, and geothermal, which uses heat right from the earth. We're investing in our own Apple onsite energy production, including solar, directed biogas fuel cells, and micro-hydro, as well as establishing relationships with third-party energy suppliers to source renewable energy.

We optimized our energy use in existing facilities and designed new facilities from the ground up with energy efficiency as a fundamental principle. Through energy efficiency measures in design and retro-commissioning, we've consistently seen energy savings of 30 percent, or more, at our data centers, corporate facilities, and retail stores.

To meet our reduced energy needs, we generate clean, renewable energy from projects we develop ourselves. Not only have we built the largest non-utility solar array and largest non-utility fuel cell installations in the country, but we've also installed solar arrays and fuel cells for our Cupertino, California, facilities. We develop energy sources with superior environmental performance and look to the Green-e National Standard and to relevant local legislation to help us decide whether a given resource is truly "renewable."

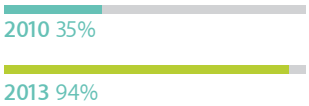
Where it's not feasible to create all of our own energy, we fulfill the remaining needs with grid-purchased renewable energy, preferably delivered to our facilities or onto the same electric grid in which our facilities are located. Here we have been exceptionally rigorous on two fronts: first, in ensuring that grid-purchased renewable energy be from newer projects, with the objective of providing investment incentives to local providers; and second, to secure renewable energy from the grid in the region in which we use it. In cases where we aren't able to purchase renewable energy in this way due to local regulations, Apple will purchase renewable energy credits (RECs),[1] which we register and are careful to retire in certified tracking systems.

How We're Achieving Net Zero Energy

Energy Efficiency
An important first step in managing electricity is to ensure our facilities use as little as possible, which is why we designed them for maximum energy efficiency.

Energy Generation
Where feasible, we're producing our own renewable energy by building our own solar arrays, fuel cells, and micro-hydro generation systems.

Purchasing Renewable Energy
Where we can't produce our own, we purchase renewable energy, investing in local, newer projects to ensure additional development that is sustainable. And we are careful to retire all renewable energy credits in verified tracking systems.



We achieved a 169 percent increase in the use of renewable energy at Apple corporate facilities worldwide.

Our approach to renewable energy is based on three principles:

Displacement. We seek to displace more polluting forms of energy in the same electric grid region in which we operate—by putting into the grid an amount of renewable energy equal to the amount of energy taken from the grid by our facilities.

Additionality. We strive to create new, clean energy that adds to the energy already being supplied to the grid. This generally means participating in renewable energy projects that would not have been built without Apple's involvement. And we make sure that the energy we count toward our goals is not counted toward the goals that utilities must already meet to comply with state standards such as Renewable Portfolio Standard (RPS).

Accountability. We apply rigor in measuring and tracking our energy supply resources, and use third-party registries such as WREGIS and NC-RETS, certification programs such as Green-e Energy, and contractual provisions to ensure that all renewable energy supplied to Apple is supplied only to Apple so there's no double-counting.

Apple's corporate campuses in Cupertino and Elk Grove, California; Austin, Texas; Munich, Germany; and Cork, Ireland are supplied with 100 percent renewable energy. As of calendar year 2013, we've already converted 73 percent of the energy for all our facilities globally—86 percent for our corporate campuses and 100 percent for our data centers. And so far in 2014, we're powering more than 140 U.S. retail stores with renewable energy.

Even though our overall energy consumption has increased by 42 percent from fiscal 2011 to fiscal 2013, our carbon footprint from energy use has dropped by 31 percent during that same time, thanks to our investments in clean sources. The avoided emissions from our renewable energy programs during those three years was over 350,000 metric tons of CO_2e, which equates to removing 75,100 passenger vehicles from the road, or to saving the electricity that would be used to power 49,100 homes for one year.[2]

When we set out to build a 100 percent renewable energy powered data center, we were told it couldn't be done. But then we did it.

All our data centers are powered by 100 percent renewable energy sources, which result in zero greenhouse gas emissions, and we're committed to keeping it that way. These energy sources include solar, wind, and geothermal power. This renewable energy comes from both onsite sources and energy obtained from local resources. The data centers run services like Siri, the iTunes Store, the App Store, Maps, and iMessage. So every time a song is downloaded from iTunes, an app is installed from the Mac App Store, or a book is downloaded from iBooks, the energy Apple uses is provided by nature. And the energy savings go beyond the data centers themselves, because there's no physical material to manufacture, package, and transport.

Maiden, North Carolina

We designed our Maiden, North Carolina, data center from the ground up for energy efficiency, and it has earned the LEED Platinum certification from the U.S. Green Building Council—the first data center of its size to be honored. On any given day, between 60 and 100 percent of the renewable energy it uses is generated onsite through directed biogas fuel cells and two 20-megawatt solar arrays—the nation's largest privately owned renewable energy installation—and we purchase any remaining power we need from entirely clean sources. The Maiden center generates 167 million kilowatt-hours of renewable energy onsite per year—enough to power the equivalent of 13,837 homes.

Energy from these zero-carbon projects displaces more polluting forms of energy, such as coal, from serving our data center power needs. Our renewable energy will be tracked in the North Carolina Renewable Energy Tracking System and overseen by the North Carolina Utilities Commission, and we will retire the renewable energy credits from our facilities so they can't be sold or put to any other use. The renewable energy projects we've already built in North Carolina have an annual generation capacity that exceeds the 162 million kWh our data center consumed during fiscal year 2013, but we will continue to expand our energy production capabilities as our data center needs grow.

We sometimes need to purchase green energy from the grid—for example, while we're building additional power generation capabilities. We make those purchases through NC GreenPower and require that all renewable energy credits are Green-e Energy certified, eligible for the North Carolina Renewable Portfolio Standard, and generated within the state.

Maiden, North Carolina—100% renewable since opening June 2010			
Duke Energy Default Grid Mix		**Apple Renewable Capacity**	
Nuclear	52%	PV1	24%
Coal	35%	PV2	24%
Other	13%	Fuel Cells	47%
Renewable	<1%	NC GreenPower	5%
2013 Default Emissions *(mtons CO_2e/year)*	**75836**	**2013 Effective Emissions** *(mtons CO_2e/year)*	**0**
From Duke Energy Carolinas 2013 Statistical Supplement generation data		*October 2013 renewable capacity*	

Prineville, Oregon

Our data center in Prineville, Oregon, is every bit as environmentally responsible as the one in Maiden. We're building a micro-hydro system that will harness the power of water that flows through local irrigation canals. When completed in 2014, it will serve most of the center's energy needs. In the meantime, since Oregon allows the direct wholesale purchase of renewable energy, we're able to directly access enough local wind energy to power the entire data center.

Prineville, Oregon—100% renewable since opening May 2012			
Pacific Power Default Grid Mix		**Apple Renewable Capacity**	
Coal	65%	Oregon Wind	99%
Natural Gas	13%	Utility Green	1%
Other	17%		
Renewable	5%		
2013 Default Emissions *(mtons CO_2e/year)*	**9965**	**2013 Effective Emissions** *(mtons CO_2e/year)*	**0**
www.oregon.gov/energy/pages/oregons_electric_power_mix.aspx		*October 2013 renewable capacity*	

Reno, Nevada

Our newest data center, in Reno, Nevada, follows in the footsteps of our 100 percent renewable energy centers in Maiden and Prineville. We're working with the local utility to codevelop an 18- to 20-megawatt solar array using a new kind of photovoltaic panel with curved mirrors to concentrate sunlight. Expected to be operational in early 2015, the solar array will have an annual production capacity of over 43 million kilowatt-hours of clean, renewable energy. Apple is using a unique approach in which we codevelop the solar array with NV Energy, the local utility: Apple designs, finances, and constructs the array, and NV Energy operates it. In support of this project, Apple worked with NV Energy and the utility commission to create a new green energy option in Nevada that's open to all commercial customers. Until the array comes online, the data center will be powered by local renewable geothermal energy purchased from the utility.

Reno, Nevada—100% renewable since opening December 2012			
NV Default Grid Mix		**Apple Renewable Capacity**	
Natural Gas	47%	Local Geothermal	100%
Coal	34%	(PV Forthcoming)	
Other	8%		
Renewable	11%		
2013 Default Emissions *(mtons CO_2e/year)*	**1095**	**2013 Effective Emissions** *(mtons CO_2e/year)*	**0**
NV Energy North Power Content Insert, November 2013		*October 2013 renewable capacity*	

Newark, California

Like our facilities in Maiden, Prineville, and Reno, our data center in Newark, California, is powered by 100 percent renewable energy. We hit this milestone in January 2013, when we began serving the data center with energy sourced primarily from California wind power. We're acquiring this energy directly from the wholesale market through California's Direct Access program.

Newark, California—100% renewable since January 2013			
Pacific Gas & Electric Default Grid Mix		**Apple Renewable Capacity**	
Natural Gas	27%	Bundled Grid (mostly wind)	56%
Nuclear	21%	Grid (mostly wind)	43%
Other	33%	Onsite	>1%
Renewable	19%		
2013 Default Emissions *(mtons CO_2e/year)*	**36,959**	**2013 Effective Emissions** *(mtons CO_2e/year)*	**0**
www.pge.com/myhome/edusafety/systemworks/electric/energymix		*October 2013 renewable capacity*	

Our colocated facilities

The vast majority of our online services are provided by our own data centers in Maiden, Prineville, Reno, and Newark. We also use third-party colocation facilities for additional data center capacity. While Apple doesn't own these shared facilities and uses only a portion of their total capacity, we include them in our renewable energy goals. And we are working with these providers to ensure that our energy load is provided in the cleanest way possible. Since early 2013, over 70 percent of our power for colocated facilities has come from renewable sources, and we won't stop until we get to 100 percent.

Our retail stores

Next in our sights are our more than 400 Apple Retail Stores across the world. It's no easy feat, because in many cases a store's electric meter is in a landlord's name, not Apple's. And many states and countries don't offer the ability to directly purchase renewable energy. But so far we have been able to convert more than 140 of our U.S. retail stores, and all 21 of our Australian stores, to 100 percent renewable energy by either purchasing from third-party renewable energy providers or participating in utility green tariff programs that meet our rigorous standards.

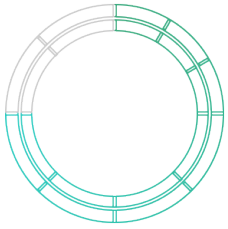
Our new home will be green from the ground up.

Like everything we build, our new Apple campus in Cupertino pushes the boundaries of technology—it will be the most energy-efficient building of its kind. Powered by 100 percent renewable energy sources, the campus goes beyond showing respect for the environment to forming a partnership with it. Air flows freely between the inside and outside of the building, providing natural ventilation for 75 percent of the year. And sunlight powers one of the largest onsite corporate solar energy installations in the world.

The building itself is just part of the story. Just under 80 percent of the site will be open space, populated by more than 7000 trees—including more than 6000 newly planted shade and fruit trees. Drought-tolerant plants will be used throughout the landscape to minimize water use.

Getting to and from the new campus will be greener, too. We're expanding our existing commute alternatives program by 20 percent. This means that over a third of our nearly 15,000 employees in Cupertino can commute to the new campus using our biofuel buses, public transit, bicycles, carpools, and their own two feet. And for drivers, we'll have over 300 electric vehicle charging stations.

The new campus is being built from the ground up to meet the highest environmental standards set by LEED, an internationally recognized green building rating system. When completed, Apple Campus 2 will be an ever-present reminder of our commitment to sustainability and an example of what every corporate campus can be.



Apple Campus 2 will use 30 percent less energy than a typical R&D office building.

Over 1000 shared bicycles will be available at Apple Campus 2.

Our current home also runs on 100 percent renewable energy.

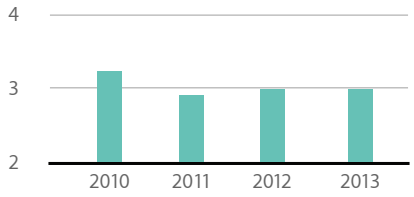
We've made energy efficiency and renewable power a priority in our current corporate campus in Cupertino, too. In 2012, we completed a major energy overhaul of our six Infinite Loop buildings, achieving a combined electric and natural gas savings of more than 30 percent at a time when occupancy increased by more than 12 percent. By applying similar equipment upgrades and control system improvements across the more than 100 buildings we occupy in Cupertino and the area, we have saved 28.5 million kWh of electricity and 751,000 therms of natural gas over the past three years.

Our Cupertino buildings are supplied by 100 percent clean, renewable energy. An onsite directed biogas fuel cell currently produces approximately 4 million kWh of electricity annually, and rooftop solar systems on our Vallco Parkway and Homestead facilities collectively produce a peak 1.1 million kWh annually. To meet the rest of our load, we purchase clean power through California's direct access program and use the Green-e Energy program to certify that it's truly renewable.

Apple's travel and commute programs.

Apple is working hard to minimize the environmental impact of employee commutes, interoffice trips, and business travel. In 2013, more than 10,000 employees a month participated in our transit subsidy program. We offer all U.S. employees a transit subsidy of up to $100 per month and encourage carpooling by, among other things, providing preferred parking spaces for ride shares. In the Bay Area, more than 2100 Apple employees per day use our free, biodiesel-powered coach buses to commute to and from our corporate offices in Cupertino and Sunnyvale, California, helping to avoid 6377 metric tons of CO_2 emissions. We also offer more than 300 electric vehicle charging ports, at no cost, and are adding more to meet increased demand. Employee use of the charging stations helped Apple avoid 161,000 kilograms of CO_2e emissions in 2013, equivalent to the emissions of an average gas-powered passenger vehicle driving 383,333 miles, and a 59 percent improvement from the year before.

GHG Emissions—Employee Travel (Metric Tons CO_2e/Employee)



Based on annual distances covered by Apple's auto fleet, worldwide air travel, and the commute miles traveled by Apple employees worldwide.

To get around while at work, our employees can use our Apple shared bike program, car-share vehicles, and intercampus shuttles. Employees took more than 71,000 trips on shared bikes in 2013.

By providing incentives for biking, using public transportation, and reducing the use of single-occupancy vehicles, our Commute Alternatives Program provided over 1 million trips in FY13 and helped Apple avoid emitting greenhouse gases equivalent to taking more than 15,000 cars off the road for a year.

Half of the vehicles in our corporate fleet are hybrids, and we continue to integrate hybrid and alternative fuel vehicles into our mix where available. Our European fleet program sets strict emissions standards of less than 165g CO_2e/km for every vehicle, which helps minimize our greenhouse gas emissions as we serve our customers around the world.

To reduce employee travel, we installed video teleconferencing equipment at all of our major facilities globally. And when employees must travel for business, we provide them with hybrid vehicle rentals where available. Apple employees drove more than 500,000 miles in hybrid rentals in 2012 and 2013, helping avoid the use of 35,000 gallons of gasoline.

In fiscal year 2013, Apple's total GHG emissions from fleet vehicles (a source of Scope 1 emissions) were 7200 metric tons of CO_2e; GHG emissions from employee commute and business travel (sources of Scope 3 emissions) were 231,100 metric tons of CO_2e.

G4 Applicable GRI indicators: EN3, EN4, EN5, EN6, EN16, EN17, EN18, EN30.

Energy Consumption and Carbon Emissions Disclosure

Fiscal and calendar year electricity and scope 1 & 2 carbon equivalent emissions data for worldwide corporate facilities, data centers, and Apple retail stores. Carbon data are shown both for the default utility grid energy (which is what we would have emitted had we not used any renewable energy) and for the effective grid mix that includes our Apple-owned and grid-purchased renewable energy.

Fiscal 2011			**Default Grid Emissions**	**Effective Emissions by Renewable Energy**
Location	**Electricity** (million kWh)	**Scope 1** (tons CO_2e)	**Scope 2** (tons CO_2e)	**Scope 2** (tons CO_2e)
Corporate	**235**	**14425**	**82183**	**59516**
Cupertino, CA	127	11007	39428	39428
Elk Grove, CA	26	556	7930	0
Austin, TX	18	45	10139	0
Cork, Ireland	10	804	4598	0
Singapore	6	–	3243	3243
Other Offices	48	2013	16845	16845
Data Centers	**138**	**0**	**51651**	**28988**
Maiden, NC	44	–	22663	0
Newark, CA	93	–	28988	28988
Prineville, OR	–	–	–	–
Reno, NV	–	–	–	–
Retail Stores	**121**	**2600**	**65769**	**65769**
Domestic (USA)	–	–	–	–
International	–	–	–	–
Total Electricity (million kWh)	**493**	**20%** Renewable—All corporate, data centers, and retail **26%** Renewable—All corporate and data centers only		
Total Net Emissions (tons CO_2e)	**171298**			
Emissions Avoided by Renewable Energy (tons CO_2e)	**45330**	**21%** Reduction of total default grid emissions		

Fiscal 2012				
Corporate	**232**	**13159**	**84611**	**48215**
Cupertino, CA	130	10949	39457	25450
Elk Grove, CA	22	560	6952	0
Austin, TX	20	59	10635	0
Cork, Ireland	10	715	4801	0
Singapore	9	32	4946	4946
Other Offices	40	845	17819	17819
Data Centers	**217**	**146**	**87732**	**7664**
Maiden, NC	104	146	52977	0
Newark, CA	111	–	33492	7664
Prineville, OR	2	–	1263	0
Reno, NV	–	–	–	–
Retail Stores	**159**	**2812**	**83285**	**83285**
Domestic (USA)	–	–	–	–
International	–	–	–	–
Total Electricity (million kWh)	**608**	**48%** Renewable—All corporate, data centers, and retail **65%** Renewable—All corporate and data centers only		
Total Net Emissions (tons CO_2e)	**155281**			
Emissions Avoided by Renewable Energy (tons CO_2e)	**116464**	**43%** Reduction of total default grid emissions		

Fiscal 2013				
Corporate	**232**	**14821**	**85354**	**17503**
Cupertino, CA	144	12231	43116	0
Elk Grove, CA	15	509	4400	0
Austin, TX	23	83	12162	0
Cork, Ireland	12	743	5320	0
Singapore	12	50	5826	5826
Other Offices	28	1205	14531	11677
Data Centers	**305**	**2201**	**123855**	**0**
Maiden, NC	160	2201	75836	0
Newark, CA	123	–	36959	0
Prineville, OR	18	–	9965	0
Reno, NV	3	–	1095	0
Retail Stores	**171**	**6158**	**77425**	**74002**
Domestic (USA)	98	3548	44606	44606
International	72	2610	32819	29397
Total Electricity (million kWh)	**708**	**72%** Renewable—All corporate, data centers, and retail **94%** Renewable—All corporate and data centers only		
Total Net Emissions (tons CO_2e)	**131844**			
Emissions Avoided by Renewable Energy (tons CO_2e)	**195129**	**60%** Reduction of total default grid emissions		

Calendar 2013				
Corporate	**238**	**15251**	**87719**	**17924**
Cupertino, CA	149	12656	44613	0
Elk Grove, CA	14	472	4077	0
Austin, TX	24	87	12757	0
Cork, Ireland	12	767	5494	0
Singapore	12	52	6102	6102
Other Offices	28	1217	14676	11823
Data Centers	**324**	**2307**	**131800**	**0**
Maiden, NC	168	2307	79477	0
Newark, CA	129	–	38666	0
Prineville, OR	21	–	11626	0
Reno, NV	5	–	2031	0
Retail Stores	**174**	**6284**	**79012**	**75589**
Domestic (USA)	99	3580	45013	45013
International	75	2704	33998	30575
Total Electricity (million kWh)	**736**	**73%** Renewable—All corporate, data centers, and retail **94%** Renewable—All corporate and data centers only		
Total Net Emissions (tons CO_2e)	**135338**			
Emissions Avoided by Renewable Energy (tons CO_2e)	**205017**	**60%** Reduction of total default grid emissions		

Product usage

Energy efficiency is built in.

The energy consumed by our products during everyday use represents a big share of our carbon footprint. So we look at three ways to reduce a product's energy consumption: more efficient power supplies to bring electricity from the wall to the device, more efficient hardware, and smarter power management software.

As a company that designs both the hardware and the software for its products, we're able to use that technological collaboration for greater energy efficiency. OS X, the Mac operating system, never misses a power-saving opportunity, no matter how small. It puts hard disks to sleep and runs processors in an ultralow power mode when you're not hard at work on your Mac. And when you are, OS X uses less energy for apps that are open but not visible, pauses animated website plug-ins until you give the OK, and can even idle the processor between keystrokes as you type. These energy savings might seem tiny, but when multiplied by every Apple computer in the world, they're huge.

A lot of the things that used to be done on a computer are now being done on an iPad or iPhone. Since these smaller devices use a lot less material and energy, their carbon footprint is much smaller than that of a computer. And as these devices become more and more advanced, their footprint continues to decrease as well—the A7 chip is up to twice as fast as the A6 while still delivering up to 10 hours of battery life. Which means that even though you'll get better performance, you won't be using more energy.

Since 2008, we've reduced the average total power consumed by Apple products by 57 percent and reduced a portion of our greenhouse gas emissions, too. So even as we continue to grow faster than the rest of the industry, we're doing it with products that are friendlier to the environment.

ENERGY STAR standards are just our starting point.

Every Apple product not only meets but far exceeds the strict guidelines set by the U.S. Environmental Protection Agency for energy efficiency. No other company in our industry can make that claim. In fact, we go beyond the ENERGY STAR specification, offering notebooks that are up to 3.8 times as energy efficient as the ENERGY STAR specification and desktop computers that are up to 4.2 times as energy efficient.[3]

The EPEAT gold standard.

The Electronic Product Environmental Assessment Tool (EPEAT) allows consumers to see the effect a product has on the environment. Each product receives a Gold, Silver, or Bronze rank depending on its efficiency and sustainability. Every Apple notebook, desktop computer, and display that EPEAT ranks achieves a Gold rating, the highest possible.

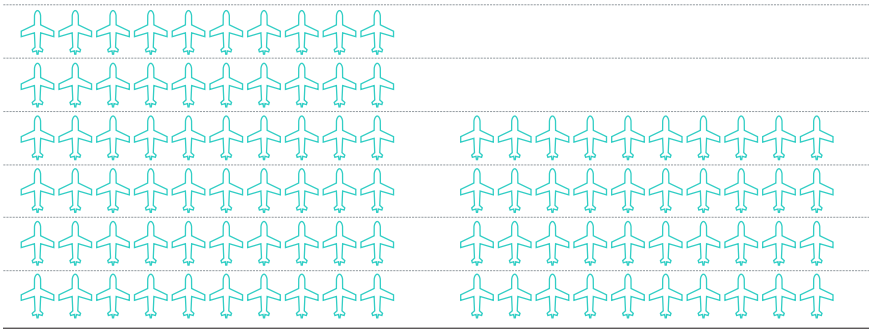
Transportation

Smaller packaging means smarter packing.

Making thinner, lighter, and more material-efficient products not only reduces their carbon footprint and conserves resources, but also helps reduce greenhouse gas emissions produced during transportation. We're shipping more and more products per trip, and the savings is adding up. Along with designing the iPhone 5s box to be 41 percent smaller in volume than the first iPhone box, we've also redesigned our iMac packaging. The slanted shape of the iMac box makes it easier to stack more on each shipping pallet. So more products can be shipped in one trip, resulting in fewer emissions.

60%

more iPhone 5s boxes in each airline shipping container. That saves one 747 flight for every 416,667 units we ship.



Recycling

Keeping recycling local.

All electronic waste we collect worldwide is processed in the region where it's collected—nothing is shipped overseas for disposal. The vast majority of our recycling is handled in-region, too, keeping our transportation-related greenhouse gas emissions low. We currently work with 153 partners around the globe whose facilities are rigorously evaluated annually on health and safety, environmental compliance, material tracking, social responsibility, and other Apple mandates.

Greener Materials

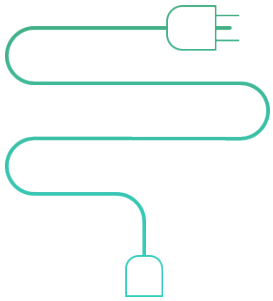
We are committed to keeping our workers safe from harmful toxins.

Many substances commonly used in the electronics industry can be harmful to people or the planet. So we design our products with cleaner, safer materials to reduce and eliminate these toxins. And we hold our suppliers accountable—we conduct factory audits, test components with independent laboratories, and verify the results in a lab we built at our headquarters in Cupertino. It's our mission to make sure anyone who assembles, uses, and recycles an Apple product can do so safely.

We continue to lead the industry in reducing or eliminating harmful toxic substances to keep both people and the environment healthy. We've removed many harmful substances from our product designs and go to great lengths to make sure they stay that way. And our suppliers must adhere to our Restricted Substances Specification, which goes beyond the minimum required by law.

Removing toxins

No product should be hazardous to your health. Or anyone else's.



After finding a safe replacement material for PVC, we certified its use in our cords in more than 40 regions around the world.

Better for the environment.
Good manufacturing processes and responsible recycling minimize toxins in our supply chain, which helps keep our land, air, and water free from pollutants. We set our own standard to stop using many harmful toxins that are damaging our environment and hope that others follow our lead.

Better for the people who use them.
No one spends more time with an Apple product than an Apple customer. By minimizing or outright eliminating many harmful toxins, we ensure that each product is safe to use, year after year. Our power cords are PVC- and phthalate-free. Our touchscreens are arsenic-free. And our cases and enclosures are BFR-free. No other company does more to keep its products free of so many toxins.

Better for the people who make them.
Apple is committed to providing safe working conditions for the people who make our products. Many toxins are restricted not only in the products themselves but also in the manufacturing processes. And our suppliers know how seriously we take this. Our Restricted Substances Specification requires them to demonstrate compliance and subjects them to third-party testing.

The worst toxic offenders.

Hg **Mercury**
Eliminated from our displays since 2009.

Pb **Lead**
Formerly used in display glass and solder. Phase-out completed in 2006.

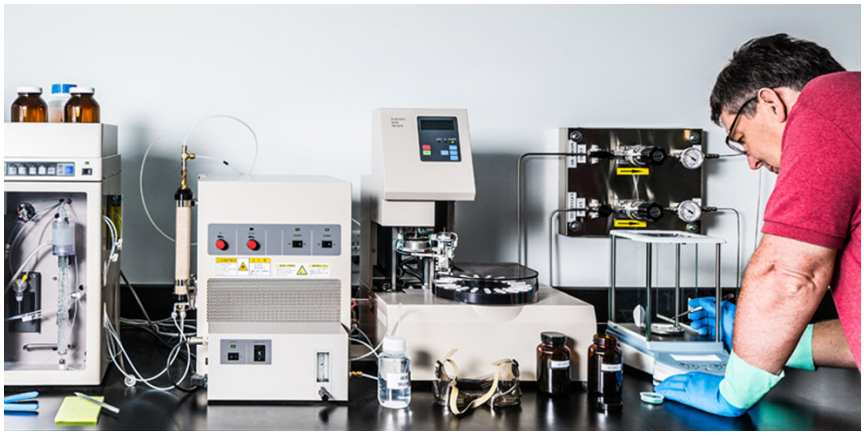
As **Arsenic**
Traditionally used for clarity in glass. Our display glass has been aresnic-free since 2008.

PVC **PVC**
Still widely used by other companies in computers, cables, and power cords. We began phasing out polyvinyl chloride (PVC) in 1995.[4]

BFRs **BFRs**
Brominated flame retardants (BFRs) are toxic compounds added to plastic enclosures, circuit boards, and connectors. Eliminated from our products in 2008.

Pht **Phthalates**
A group of chemicals known as endocrine disruptors used to soften plastics in cables and power cords. Finished eliminating from cables and power cords in 2013.[4]

We design products with safer materials.
Designing greener products means considering the environmental impact of the materials used to make them. From the glass, plastic, and metal in our products to the paper and ink in our packaging, we're conscious of how those materials affect our products as well as our environment. We continue to lead the industry in reducing or eliminating environmentally harmful substances, and we're continually striving to make our products the cleanest and safest they can be.



Ion chromatography is just one of several methods our Environmental Testing Lab uses to ensure the safety of our products.

Product testing

Testing for toxins begins at home.
We work closely with our suppliers to make sure our products are free from the harmful substances we specify. And we go to great lengths to confirm that. In fact, it's the mission of the Environmental Testing Lab we built at our headquarters in Cupertino. There we submit our products' components to rigorous analysis—including X-ray fluorescence spectroscopy and ion chromatography—to literally see what they're made of.

See Appendix A, Apple's Environmental Health and Safety Policy statement.

Finite Resources

Over 90 percent of the products we collect at our take-back events and recycle are not our own.

We have one planet with a finite amount of resources on it, and we have a responsibility to conserve those resources so future generations will have them, too. So our resource conservation starts right from the beginning—in the design stage. We create compact products that are more material efficient and last longer before they need to be replaced. And when there is remnant material, we look for opportunities to reuse that material so it doesn't go to waste. Even the paper we use for our product packaging, iTunes Gift Cards, and iPhoto products includes recycled or recyclable materials. We work directly with paper mills to source paper from certified sustainably managed forests and controlled wood sources. And once an Apple product reaches the end of its life, we make it easy to recycle. Every Apple Retail Store will now take back Apple products for free, responsible recycling. We also hold special recycling events where we'll even accept other companies' products. We're continually thinking of ways to make more innovative products without taking more from the environment.

There are limits to our planet's riches. So we're working hard to take no more than we need. Using less. And recycling more. We've come up with innovative ways to minimize the environmental impact of our raw materials by using more recycled, recyclable, and sustainable plant-based materials. From the aluminum in our notebooks to the paper in our packaging, we're conscious of every material we use—and of using every material responsibly.

Conserving materials

We're doing more with less.

Over the past decade, Apple designers and engineers have continued to pioneer new ways to build our products with less material. Manufacturing innovations such as unibody construction have allowed products like iPad, MacBook Pro, and MacBook Air to become thinner while being even more resilient. Today's Mac Pro uses 74 percent less aluminum and steel than the previous design. And the newest iMac is made with 68 percent less material than the first iMac.

Designed for durability.

Smaller and lighter products are easier on the environment, but sometimes the environment isn't easy on them. So we design everything from our largest displays to our smallest cables to be durable and long-lasting. And to make sure they are, we test them in our Reliability Testing Lab at our headquarters in Cupertino.

You don't have to buy a new Apple product to have one that feels new. We make it easy to update to new versions of apps, software, and entire operating systems—OS X Mavericks works on Mac computers made as far back as 2007—so you'll have a new experience without buying a new device.

Our built-in notebook batteries last up to five years. Which saves on buying new batteries, produces less waste, and increases the lifespan of your notebook.

And when Apple product owners pass along their devices to friends or family, they're conserving resources, too. Sometimes the mark of a great product isn't how many you sell, but how much it's used.

Recycling

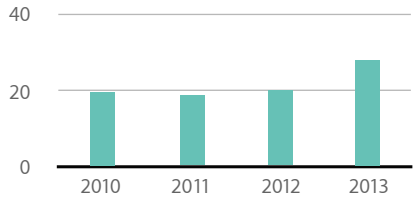
Our commitment to recycling.

If not recycled properly, electronic waste can be a serious health and environmental issue. It's often dumped in countries where dangerous recovery techniques leach toxins from electronics that can affect people and the environment. That's why we're committed to helping people recycle responsibly. Every Apple Retail Store in the world will take back Apple products for free, responsible recycling. We've also set up recycling programs in cities and college campuses in 95 percent of the countries where our products are sold, diverting more than 421 million pounds of equipment from landfills since 1994. In regions where we don't have take-back programs with physical drop-off/pickup locations, we arrange for pickup, transport, and environmentally sound recycling of electronics. And it's not just Apple products that we recycle through these programs and events. In fact, over 90 percent of the products we collect and recycle are not our own.

In 2010, we set out to achieve a worldwide recycling collection rate of 70 percent of the total weight of the products we sold seven years earlier. Since then, we have consistently reached 85 percent, while others in the industry reported numbers lower than 20 percent. But our larger goal is to identify new recycling technologies that can help us recover additional materials and increase resource efficiency. That's one reason we've joined with the Ellen MacArthur Foundation. It's a like-minded group working to establish a more circular economy, in which material is transformed instead of wasted.

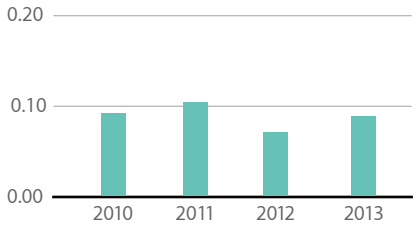
Since 1994, we have diverted more than 421 million pounds of electronic equipment from landfills.

Water Usage (m^3/Employee)

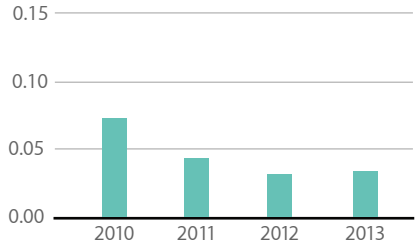


Water data is compiled from utility consumption data for sites owned and leased by Apple.

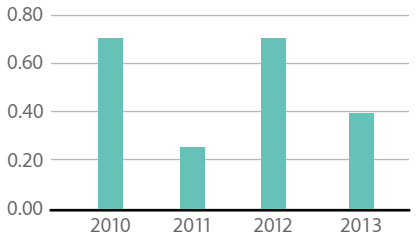
Recycled Material (Metric Tons/Employee)



Solid Waste (Metric Tons/Employee)



Hazardous Waste (Kilograms/Employee)



Everyone should have water to use and reuse.

Water is the world's most precious resource. At our own facilities, as well as those of our suppliers, we continue to look for ways to reduce water consumption during manufacturing, cooling, landscaping, and sanitation.

Our Maiden, North Carolina, data center employs an innovative cooling system that reuses water 35 times, resulting in a 20 percent reduction in overall water consumption at the data center.

At our facilities that receive less dependable rainfall, we've installed sophisticated irrigation systems that monitor local weather conditions and soil moisture, which led to a 40 percent reduction in landscape watering. At some facilities, we've achieved further reductions thanks to drought-tolerant landscaping and drip irrigation.

Apple used 2.3 million cubic meters of water in 2013. That same year, we made a number of water improvements at our Cupertino headquarters. We converted over six acres of landscaping to climate-adapted, drought-tolerant plants and retrofitted the irrigation system to optimize water savings. We replaced over 36,000 square feet of turf with drought-tolerant plants, which is expected to save over 3 million gallons of water each year. And we recycled 4214 cubic yards of landscape mulch to use onsite, which increases soil moisture and reduces overall water demand.

Despite these investments, in 2013 our water consumption rose to 29 cubic meters per employee, from 20 in 2012. The largest contributors to the increase were preparation for the construction of Apple Campus 2, where water has been used to minimize dust and mitigate other environmental issues, and continued expansion of our facilities globally. We have also seen increased water use at our existing facilities where additional server rooms and test equipment has increased cooling needs.

To make sure our suppliers are part of our water conservation efforts, we've established the Clean Water Program. This initiative helps reduce water use, promote water recycling and reuse, and prevent illegal water pollution within our supply chain.

When we buy on Apple's behalf, we think green.

Apple prioritizes environmentally friendly products and services for use in our operations. More than 98 percent of our U.S. office consumables contain post-consumer recycled content. The standard office chair contains up to 51 percent recycled content and is up to 95 percent recyclable, achieving a GreenGuard Gold Certification. The janitorial supplies we procure include 100 percent recycled paper products. And the majority of the food served in our Cupertino-area employee cafeterias come from sources within 100 miles.

Composting and recycling in our corporate facilities.

We've created robust recycling and composting programs to minimize the environmental impact of the waste we produce in our corporate facilities. In FY2013, we recycled 7100 metric tons of materials as part of our everyday operations, and 1000 metric tons of office-grade confidential paper. A majority of the disposable tableware and containers in our Cupertino employee cafeterias are biodegradable or compostable, and our food and composting waste is made available to commercial farms. Since 2007, we've diverted more than 1300 metric tons of waste from landfills through composting, and we expanded the program to our Austin, Texas, campus in 2012. Apple has a robust hazardous waste program for the small amount of waste that we produce (mostly from research and development). We ensure that any materials that may pose a risk to the environment are treated and disposed of in the proper manner. In 2013, the total amount of solid waste created by Apple facilities was 2700 metric tons, and the total amount of hazardous waste generated was 32 metric tons.

G4 applicable GRI indicators: EN8, EN10, EN23, EN25.

Appendix A

Environmental Health and Safety Policy Statement

Mission Statement

Apple Inc. is committed to protecting the environment, health, and safety of our employees, customers and the global communities where we operate.

We recognize that by integrating sound environmental, health, and safety 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 environmental, health and safety 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 through periodic management reviews.

Where laws and regulations do not provide adequate controls, we will adopt our own standards to protect human health and the environment.

Support and promote sound scientific principles and fiscally responsible public policy 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 policies 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.

Ensure that all employees are aware of their role and responsibility to fulfill and sustain Apple's environmental, health and safety management systems and policy.

See our policy on the web: http://images.apple.com/environment/reports/docs/EHS_policy2013.pdf

Appendix B

Carbon Assurance and Review Statements

Apple 2013 Assurance Statement (Pages 22–24)

CCF FY13 Review Statement (Pages 25–28)

BUREAU VERITAS NORTH AMERICA

INDEPENDENT ASSURANCE STATEMENT

Introduction and objectives of work

Bureau Veritas North America, Inc. (BVNA) was engaged by Apple, Inc. (Apple) to conduct an independent assurance of select environmental data reported in its 2013 Apple Facilities: Environmental Footprint Report (the Report). This Assurance Statement applies to the related information included within the scope of work described below. The intended users of the assurance statement are the stakeholders of Apple. The overall aim of this process is to provide assurance to Apple's stakeholders on the accuracy, reliability and objectivity of select information included in the Report.

This information and its presentation in the Report are the sole responsibility of the management of Apple. BVNA was not involved in the collection of the information or the drafting of the Report.

Scope of Work

Apple requested BVNA to include in its independent review the following:

- Assurance of select environmental data and information included in the Report for the fiscal year 2013 reporting period (September 30, 2012 through September 28, 2013), specifically, in accordance with Apple's definitions and • World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol:
    - Energy (Direct and Indirect Consumption)
    - Renewable Energy Credits (Self-Generation, Direct Access, Utility Green Energy Programs, and Market RECs) – Corporate Campuses and Data Centers in Cupertino, California; Elk Grove, California; Austin, Texas; Maiden, North Carolina; Prineville, Oregon; Reno, Nevada; Munich, Germany; Cork, Ireland; and Australia
    - Water (Total withdrawal)
    - Greenhouse Gas (GHG) Emissions: Direct Scope 1, Indirect Scope 2 by weight
    - GHG Emissions: Optional Indirect Scope 3 emissions by weight (Employee Commute and Air Travel
    - Waste Quantities and Disposition
    - Appropriateness and robustness of underlying reporting systems and processes, used to collect, analyze, and review the environmental information reported;

Excluded from the scope of our work is any assurance of information relating to:

- Text or other written statements associated with the Report
- Activities outside the defined assurance period

Methodology

BVNA undertook the following activities:

1. Interviews with relevant personnel of Apple (10 individuals including employees and external contractors at the corporate level);

2. Review of internal and external documentary evidence produced by Apple;
3. Audit of environmental performance data presented in the Report, including a detailed review of a sample of data against source data; and
4. Review of Apple information systems for collection, aggregation, analysis and internal verification and review of environmental data.

Our work was conducted against Bureau Veritas' standard procedures and guidelines for external Verification of Sustainability Reports, based on current best practice in independent assurance. Bureau Veritas procedures are based on principles and methods described in the International Standard on Assurance Engagements (ISAE) 3000.

The work was planned and carried out to provide reasonable assurance for all indicators, except as noted below, and we believe it provides an appropriate basis for our conclusions.

Verification of Renewable Energy Credits and Scope 3 GHG emissions was carried out to provide limited assurance.

Our Findings

BVNA verified the following indicators for Apple's Fiscal Year 2013 reporting period (September 30, 2012 through September 28, 2013):

Parameter	Quantity	Units	Boundary/ Protocol
Natural Gas Consumption:	7,564,141	therms	Worldwide occupied properties / Apple Internal Protocol
Electricity Consumption:	708,122,215	kilowatt hours (kWh)	Worldwide occupied properties / Apple Internal Protocol
Renewable Energy Credits:	527,698,368	kWh	Worldwide / Invoiced quantities
Scope 1 GHG Emissions	47,552	metric tons of carbon dioxide equivalent (tCO_2e)	Worldwide occupied properties / WRI/WBCSD GHG Protocol
Scope 2 GHG Emissions	286,634	tCO_2e	Worldwide occupied properties / WRI/WBCSD GHG Protocol
Scope 3 GHG Emissions (Employee Commute & Air Travel)	231,128	tCO_2e	Worldwide occupied properties / WRI/WBCSD GHG Protocol Value Chain (Scope 3)
Water Withdrawal	2,317,181	cubic meters (m^3)	Worldwide occupied properties / Apple Internal Protocol
Trash disposed in Landfill	2,686,967	kilograms (kg)	Worldwide occupied properties / Apple Internal Protocol
Hazardous Waste (Regulated waste)	31,437	kg	Worldwide occupied properties / Apple Internal Protocol
Recycled Material (Removal by recycling contractor)	7,196,709	kg	Worldwide occupied properties / Apple Internal Protocol

Our Conclusion

Based on the assurance process and procedures conducted, we conclude that:

- The Energy, Water, Waste, and Scope 1 & 2 GHG Emissions assertions shown above are materially correct and are a fair representation of the data and information; and
- Nothing has come to our attention to indicate that the Renewable Energy Credits and Scope 3 GHG emissions assertion within the scope of our verification is not materially correct and is not a fair representation of the actual data for the assurance period.
- Apple has established appropriate systems for the collection, aggregation and analysis of relevant environmental information, and has implemented underlying internal assurance practices that provide a reasonable degree of confidence that such information is complete and accurate.

Statement of independence, impartiality and competence

BVNA is an independent professional services company that specializes in Quality, Health, Safety, Social and Environmental management with over 180 years history in providing independent assurance services, and an annual 2012 revenue of $3.9 billion Euros.

No member of the assurance team has a business relationship with Apple, its Directors or Managers beyond that of verification and assurance of sustainability data and reporting. We have conducted this verification independently and we believe there to have been no conflict of interest.

BVNA has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The assurance team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of BVNA standard methodology for the Assurance of Sustainability Reports.

Bureau Veritas North America, Inc.

San Ramon, California

June 2014

Fraunhofer IZM

Review and Verification Statement

Company Carbon Footprint – Scope 3: Product related Carbon Footprint for Fiscal Year 2013

Fraunhofer IZM reviewed Apple's scope 3 company carbon footprint (CCF) data related to the products manufactured and sold by Apple Inc. in fiscal year 2013. This review was done remotely.

1 Summary

This review checks transparency of data and calculations, appropriateness of supporting product related data and assumptions, and overall plausibility of the calculated corporate annual carbon footprint comprised of emissions derived from the life cycle assessment (LCA) of Apple products shipped in fiscal year 2013. This review and verification focuses on Scope 3 emissions for products sold by Apple Inc. (as defined by WRI/WBCSD/Greenhouse Gas Protocol – Scope 3 Accounting and Reporting Standard). It is noted that emissions relating to the facilities that are owned or leased by Apple (scope 1 and 2 emissions) as well as business travel and employee commute were subject to a separate third party verification and are therefore excluded from the scope of this statement. Confidential data relating to product sales and shipments were also excluded from the scope of this verification.

This review and verification covers Apple's corporate annual greenhouse gas emissions and does not replace reviews conducted for individual product LCAs for greenhouse gas emissions (GHGs). This review does not explicitly rely on any standard for life cycle assessment or reporting of greenhouse gas emissions (such as ISO 14064-3: Greenhouse gases -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions, WRI/WBCSD/Greenhouse Gas Protocol – Scope 3 Accounting and Reporting Standard). However it is noted that the life cycle emissions data produced by Apple for individual products has been calculated in accordance to the standard ISO 14040/14044: Environmental management – Life cycle assessment – Principles and framework / Requirements and guidelines.

The review of the corporate annual carbon footprint has considered the following criteria:

- The system, boundaries and functional unit are clearly defined
- Assumptions and estimations made are appropriate
- Selection of primary and secondary data is appropriate and methodologies used are adequately disclosed

These criteria are also fundamental to the review of LCAs conducted for individual product emissions. The reviewers note that the largest share (98%) of Apple Inc. annual corporate carbon footprint is comprised of scope 3 emissions from individual products. The aforementioned criteria have been regularly reviewed by Fraunhofer IZM since 2007 with a view to providing independent feedback that can facilitate continuous improvement and refinement in the LCA methodology applied by Apple Inc.

Data reported by Apple is as follows:

	Manufacturing	Transportation	Product Use	Recycling
2013	23.636.902	1.610.854	7.507.563	447.256
	[metric tons CO2e]	[metric tons CO2e]	[metric tons CO2e]	[metric tons CO2e]

The review has not found assumptions or calculation errors on the CCF data level that indicate the scope 3 corporate carbon footprint has been materially misstated. All results and also changes to figures reviewed for fiscal year 2013 are plausible.

2 Reviewed Data and Plausibility Check

As part of this review Apple disclosed the following data to Fraunhofer IZM:

- Sales data for FY2013, excluding accessories
- Regional distribution of sold units and country specific allocation per product to the five main regions USA, Europe, China, Rest of Asia and Australia
- Product specific data on transportation including breakdown of air and sea shipment

- Life cycle GHG emissions for all products, now for the first time differentiating the actual product configurations (i.e. memory capacity)
- Calculation methodology for the company carbon footprint and methodological changes implemented in 2013
- The total company carbon footprint – scope 3 for the fiscal year 2013
- Detailed analysis of the CCF including:
    - The breakdown of the CCF into life cycle phases manufacturing, transportation, product use and recycling
    - Detailed product specific split into life cycle phases
    - The contribution of individual products and product families to the overall CCF

This review comprises a check of selected data, which are most influential to the overall company carbon footprint. The overall plausibility check addressed the following questions:

- Are product LCAs referenced correctly?
- Are results for products, for which no full LCA review was undertaken, plausible?
- Are carbon emission data for invidual products plausible in the light of methodological changes as indicated by Apple?

At the time this CCF review was undertaken 5 product LCA reviews were still pending, but results were checked roughly.

3 Findings

The methodological changes implemented with the 2013 CCF data are confirmed to lead to a significant improvement in terms of accuracy of the results. Inevitably this hampers the comparability of 2013 results with earlier CCF data.

Based on the explanations provided, the increase in CCF total values from 2012 to 2013 is largely due to methodological improvements and not due to actually increased real emissions. Compared to 2012 the real greenhouse gas emissions in 2013 actually are lower.

Among the 5 LCA studies with pending reviews no major shortcoming were identified, and it can be stated that also in the case of these 5 products the CCF builds on a sound data base.

All questions raised in the course of the review were answered by Apple and related evidence was provided where needed.

4 Conclusions

Earlier reviews concluded with the recommendation, that more supplier specific data should be included. Following the good practice of improving from year to year the data base and the modelling approach, this year the modelling of aluminum production and processing has been significantly enhanced.

Accessories sold separately (cables and docks, smart covers, mice, keyboards etc.) are not included in the CCF figures. As accessories shipped with products are always of minor relevancy compared to the total product (< 10% of production related carbon footprint) it can be assumed, that separately sold accessories have a marginal effect on the CCF only. It is recommended to verify this aspect in future CCF calculations.

The review has not found assumptions or calculation errors on the CCF data level that indicate the scope 3 corporate carbon footprint has been materially misstated. The excellent analysis meets the principles of good scientific practice.

Berlin, April 10, 2014

- Karsten Schischke -
Fraunhofer IZM
Dept. Environmental and
Reliability Engineering

- Marina Proske -
Fraunhofer IZM
Dept. Environmental and
Reliability Engineering

Appendix C

References

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

The Global Reporting Initiative (GRI) Sustainability Reporting Guidelines version 4.0 were considered during the preparation of this report.

[1]When Apple does acquire RECs, we require that they (i) are Green-e Energy certified, (ii) are eligible for the state Renewable Portfolio Standard (RPS), and (iii) come from the same NERC region—and preferably the same state—as the Apple facility they support. [2]Carbon emissions equivalences calculated using EPA's Greenhouse Gas Equivalencies Calculator: www.epa.gov/cleanenergy/energy-resources/refs.html. [3]Based on ENERGY STAR Program Requirements for Computers Version 6.0. [4]With the exception of India and South Korea, where we continue to seek government approval for our PVC replacement.

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