Inspiring Change

CEA 2010 SUSTAINABILITY REPORT

ENVIRONMENTAL PERFORMANCE

SOCIAL PERFORMANCE

LETTER FROM THE CONSUMER ELECTRONICS ASSOCIATION

CEA is pleased to release the *2010 Sustainability Report* documenting the important contributions of our industry to create a more sustainable world. Our initial report in 2008 received wide acclaim, and we are pleased to publish an updated report. By reporting on the efforts of the industry on an ongoing basis, we can highlight how the consumer electronics industry is acting boldly and continuing to raise the bar in addressing environmental and societal challenges.

Since 2008, CEA members have continued to adopt more sustainable business practices from sourcing through recycling. These activities result in better products that use fewer materials, are more energy efficient, and are more recyclable. CEA members have also increased efforts to collect and recycle electronics responsibly.

CEA is committed to adopting more sustainable business practices in its own operations as well. In 2009 CEA was honored by *Trade Show Executive* Magazine with the "Leader in Green Initiatives" Gold Grand Award for the greening of the Consumer Electronics Show (CES), the world's largest consumer technology tradeshow. At the 2010 International CES™, CEA worked with the Las Vegas Convention Center to recycle 68 percent (372.2 tons) of the total solid waste generated by show attendees through diversion of cardboard, paper, metal, wood, carpet padding and plastic from landfills.

The 2011 CES will feature the Sustainable Planet TechZone, which showcases consumer electronic technologies that make it possible for every person on the planet to live a more sustainable lifestyle while staying connected and informed. CE products help in the development of greener buildings, smart grids, solar and renewable energy, and wireless convergence.

CEA is actively engaged in research, particularly on the energy consumption of consumer electronics, and has published the following reports: *The Energy and Greenhouse Gas Emissions Impact of Telecommuting and e-Commerce,* and *Energy Consumption by Consumer Electronics in U.S. Residences*. An update of the latter report, our comprehensive energy use study is underway and expected to be published in early 2011.

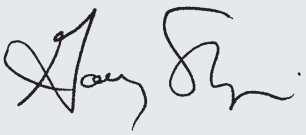
CEA member companies have realized significant benefits from integrating sustainability into their businesses, from increased use of life cycle assessment in eco-design to further reductions of energy in the use phase of electronics, to innovative eCycling programs resulting in the recovery of millions of pounds of valuable resources. While this report highlights case studies documenting the achievements of several of our members, we know there are thousands of other leading examples across our industry and we applaud all such efforts.

In addition to individual member initiatives, a number of our members participate in working groups, consortiums, and broader collaborative projects to advance sustainability. One example is The Sustainability Consortium's Electronics Sector Working Group, which is focused on creating scientifically grounded and transparent metrics for measuring and reporting the environmental and social impacts of electronics.

We've also seen growth in the demand from consumers and businesses for greener electronics, which is a great sign for our industry. Unit sales of EPEAT- (Electronic Product Environmental Assessment Tool) registered products in the U.S. grew by 10 percent in 2009, to a total of 48.5 million products. Outside of the U.S., there were nearly 8,500 EPEAT registrations of products. Although EPEAT is designed for institutional purchasers some retailers advertise product EPEAT status to consumers in response to heightened consumer interest.

With respect to eCycling, two new third-party certification programs have been initiated — Responsible Recycling (R2) and E-Stewards — to distinguish recyclers adhering to the highest standard of environmental responsibility and worker protection. CEA has also been leading the development of a national, industry-wide eCycling approach that will ensure all parties involved are held to high industry practices, accountability and standards, and will lead to more electronics recycling. We are gearing up to launch this exciting initiative in 2011.

As our understanding of sustainability and what it means for our industry advances, so will the expectations of our stakeholders. We have great confidence in the CE industry's ability to innovate and we look forward to continuing our role in aiding, advising, and guiding the industry to not only provide great products, but also to preserve our environment and enhance social well-being in local and global communities.



Gary Shapiro
President and CEO
Consumer Electronics Association

Walter Alcorn
VP Environmental Affairs & Industry Sustainability
Consumer Electronics Association

ABOUT THE CONSUMER ELECTRONICS ASSOCIATION

The Consumer Electronics Association (CEA) is the preeminent trade association promoting growth in the $170 billion U.S. consumer electronics industry. More than 2,000 companies enjoy the benefits of CEA membership, including legislative advocacy, market research, technical training and education, industry promotion, standards development and the fostering of business and strategic relationships. CEA also sponsors and manages the International CES — The Global Stage for Innovation. All profits from CES are reinvested into CEA's industry services. Find CEA online at CE.org.

The Sustainable Planet TechZone at CES highlights eco-friendly products made by the CE industry.

CEA'S VISION FOR SUSTAINABILITY

CEA defines sustainable business as business that operates in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs.

This definition is a variation on the classic Brundtland Commission definition of sustainable development: Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

CEA is committed to the ongoing promotion of sustainability among its members, as well as continual integration of sustainability in its own business practices.

ABOUT THIS REPORT

CEA's *2010 Sustainability Report* is the second report profiling the environmental and social leadership activities of our member companies. This report addresses activities of the industry during 2008, 2009 and 2010.

We have selected and reported on a number of key indicators that provide a snapshot of the sustainability performance of the industry. Where appropriate, these indicators reflect those recommended by the Global Reporting Initiative's (GRI) Sustainability Reporting Guidelines. Due to the size of our industry, it is not feasible to report on the performance of all of our members. To provide this snapshot on performance, we did two things:

- Gathered industry wide data where feasible for indicators such as total pounds (lbs) of electronics recycled every year and total number of EPEAT-certified products sold in the U.S. and internationally, and
- Collected data from published fiscal year 2009 sustainability reports for the 10 largest CE companies in our membership from a global revenue perspective (**Dell, HP, LG Corp., Microsoft, Nokia, Panasonic, Philips, Samsung, Sony** and **Toshiba**), for indicators such as total charitable contributions and total direct and indirect greenhouse gas emissions by weight.

The top 10 consumer electronics companies in CEA's membership (from a global revenue perspective) employ approximately two million people globally and had combined revenue of around $750 billion in 2009, according to public financial information.

We also invited all of our members to contribute case studies for the report documenting their environmental and social business practices in areas such as Sustainable Product Design, Sustainable Transport & Delivery, eCycling and others. These exceptional stories are highlighted throughout the report. Our hope is to drive adoption of these practices widely across the industry, including small and large companies in our membership.

Additional details on each specific member's operations are available on their corporate websites and within their own sustainability reports.

Give Us Feedback!

This report is available to stakeholders for download on our website CE.org. Please direct any inquiries or comments to:

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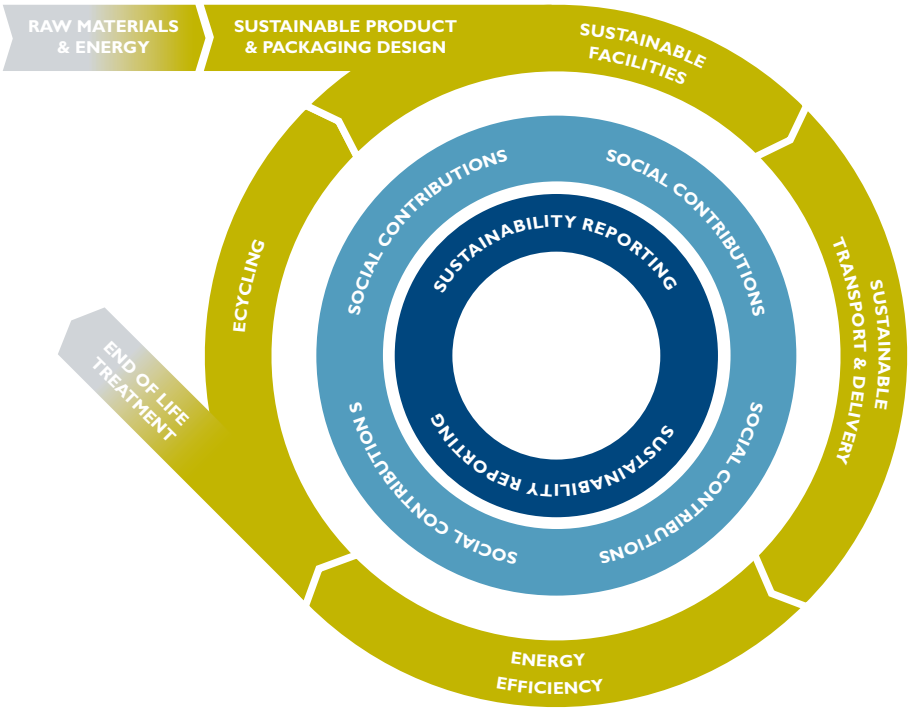


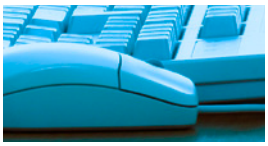
This report highlights leading sustainability activities of the industry along the life cycle phases of CE products from an environmental perspective, and also documents best practices in the sector from a social contribution and transparency point of view.

Environmental Performance

- **Sustainable Product & Packaging Design** – how companies are integrating environmental and social considerations into the design process to create products and packaging that use fewer materials, are lighter and more energy efficient, contain fewer harmful chemicals, and allow for refurbishment or recycling.
- **Sustainable Facilities** – what companies are doing to reduce the use of energy, water, materials, and waste in their facilities.
- **Sustainable Transport & Delivery** – how companies optimize efficiencies in their supply chains and in the delivery of the finished product to consumers.
- **Energy Efficiency** – what companies have done to reduce the energy required to operate CE equipment at home, at work and in institutions.
- **eCycling** – what companies are doing to manage their products responsibly at the end of their useful life.

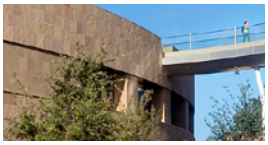
Social Performance

- **Social Contributions** – how companies are making commitments and contributions to community welfare and development.
- **Corporate Sustainability Reporting** – how companies are publicly and transparently reporting on their broad sustainability performance.



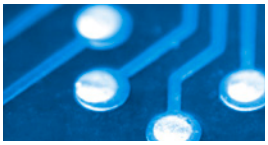
Sustainable Product Design

- U.S. sales of EPEAT-certified desktops, laptops, and displays grew nearly 10 percent in 2009, to a total of 48.5 million units.
- Outside of the U.S., there were nearly 8,500 EPEAT registrations of products in 2009.



Sustainable Facilities

- Nine of the 10 largest CE companies by global revenue have been reporting to the Carbon Disclosure Project (CDP) since 2007 and are improving their reports by increasing the amount and quality of data reported each year.
- Nine of the 10 largest CE companies by global revenue have established corporate-wide commitments to ISO 14001 certification and report on the number and location of ISO certified facilities.



Energy Efficiency

- Currently, more than 27,000 CE product models meet ENERGY STAR specifications set by the U.S. Environmental Protection Agency (EPA) and Department of Energy (DoE).
- In 2009, the U.S. EPA estimated that consumers purchased 1.4 billion units of ENERGY STAR qualified electronics since the program began.

eCycling

- In 2009, CEA estimated that the electronics recycling efforts of manufacturers and retailers in the U.S. diverted more than 200 million pounds of electronics from landfills.
- The CE industry has established more than 5,000 locations in the U.S. to collect consumer electronics for recycling.

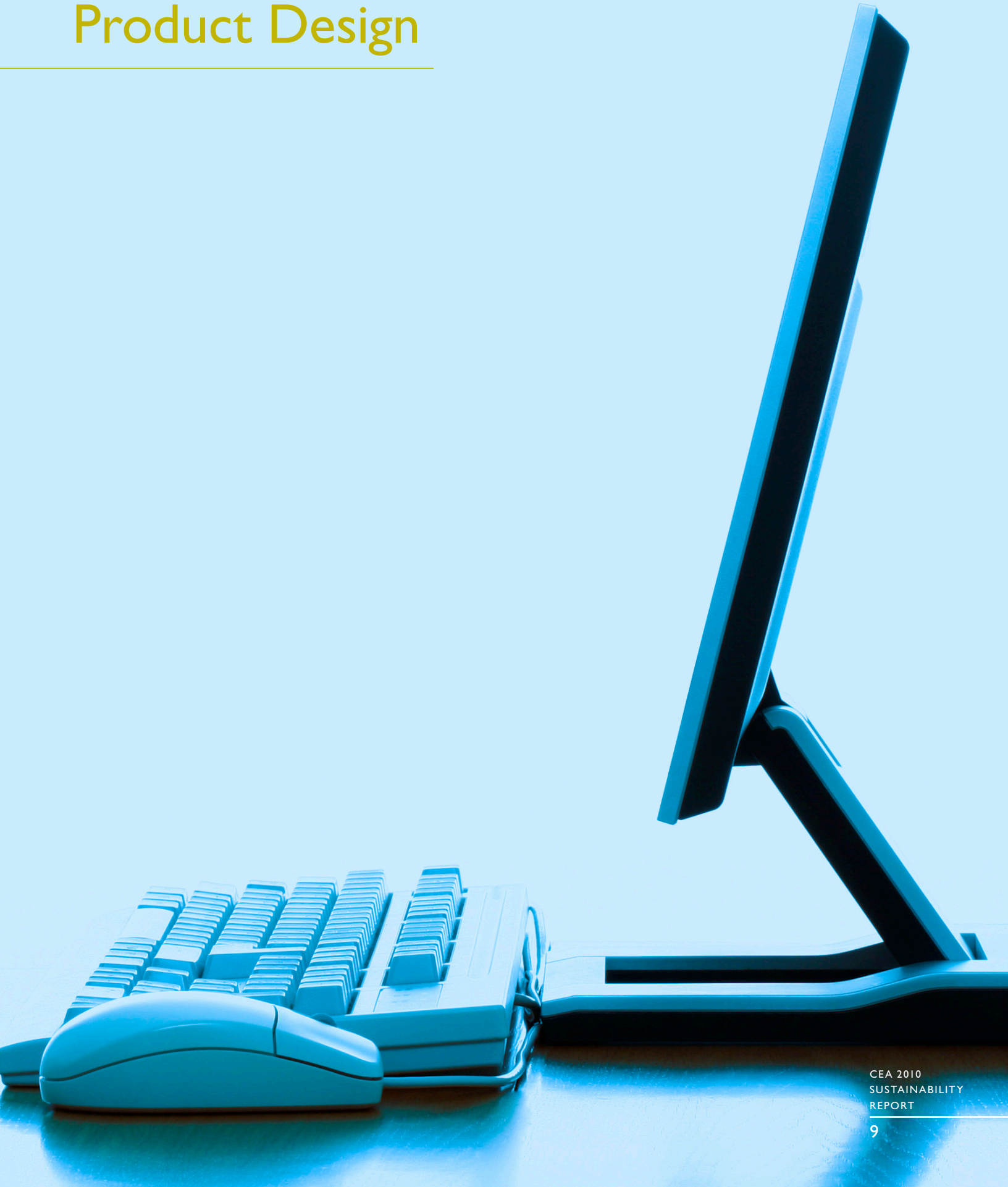
Social Contributions

- In 2009, the 10 largest CE companies by global revenue donated $882 million, in both cash and products, to support activities that enhance local environments, social well-being, and/or economic development.

Sustainability Reporting

- All 10 of the largest CE companies by global revenue issue public sustainability reports using guidance from the Global Reporting Initiative.

Sustainable Product Design



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ENVIRONMENTAL PERFORMANCE

Sustainable Product Design

The design phase is critical to creating a more sustainable product, as it determines the environmental impacts that will occur throughout the product's entire life cycle. By designing for sustainability, CE companies have the potential to reduce material use, increase energy efficiency and enhance recyclability.

Design for Environment Tools

Because of the complicated supply chains associated with electronics manufacturing, Life Cycle Assessment (LCA) has emerged as a leading tool guiding product design efforts, from material sourcing to energy efficiency to responsible product disposal. LCA is a technique to assess the potential environmental impacts associated with a product, and evaluate the benefits of different design options. By identifying the product life cycle stages that contribute to the greatest environmental impacts, CE companies are able to take effective steps to reduce these impacts through product redesign.

Other Design for Environment (DfE) tools, such as the Joint Industry Guide (JIG) — Material Composition Declaration for Electrotechnical Products, also help the CE industry comply with new and emerging legislation around material restrictions. The European Union's Restriction of Hazardous Substances (RoHS) Directive restricts the use of six hazardous materials in the manufacture of electronic equipment. The EU's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Directive also calls for the progressive substitution of the most hazardous substances when suitable alternatives have been identified.

Image source: http://www.apple.com/environment/

Apple Communicates User-Friendly LCA Results to Consumers

Apple was the first in the industry to complete a comprehensive life cycle analysis for every product it ships to determine where its greenhouse gas (GHG) emissions came from. Apple discovered that 97 percent of the company's footprint is directly associated with its products — from manufacturing to customer use to recycling — and only three percent from its facilities. That's why Apple is focused on designing the next generations of products to use less material, ship with smaller packaging, be free of many toxic substances, and be as energy efficient and recyclable as possible. On "The Story Behind Apple's Environmental Footprint" webpage, the company graphically depicts the life cycle of an Apple product and the relative impact each life cycle stage has on the environment. Environmental performance for individual products, including a breakdown of the GHG emissions for each stage of the lifecycle can be found in Apple's Product Environmental Reports.

The JIG Guide facilitates the reporting of material content information in electronics products across the global supply chain. This document sets minimum requirements for material declaration for electronic products based on the requirements of RoHS, REACH and other existing legislation, but does not preclude companies from inquiring about the presence of additional substances when necessary for their needs.

Utilizing DfE tools like LCA and the JIG Guide enable CE companies to design more sustainable products that use environmentally preferable materials, fewer materials, and maximize reusability and recyclability at the end of the product's life.

The JIG Guide was developed by The Consumer Electronics Association, DIGITALEUROPE and the Japanese Green Procurement Survey Standardization Initiative.
To view the guide, visit: CE.org/JIG

Increasing Material Efficiency

Many electronics manufacturers also are working to improve the material efficiency of their products. This is known as dematerialization, and results in products that consume fewer resources, require less energy to transport, and are easier to recycle at the end of life. Over the last few years, product weights have decreased dramatically in many product categories. The Washington Materials Management & Financing Authority (WMMFA) compiled data on average weights of electronics produced from 2008 to 2010, and found that generally, weights have decreased over time (see Figure 1). The outlier in the group — LCD monitors over 19 inches — has increased in weight since 2008 due to larger monitors becoming popular.

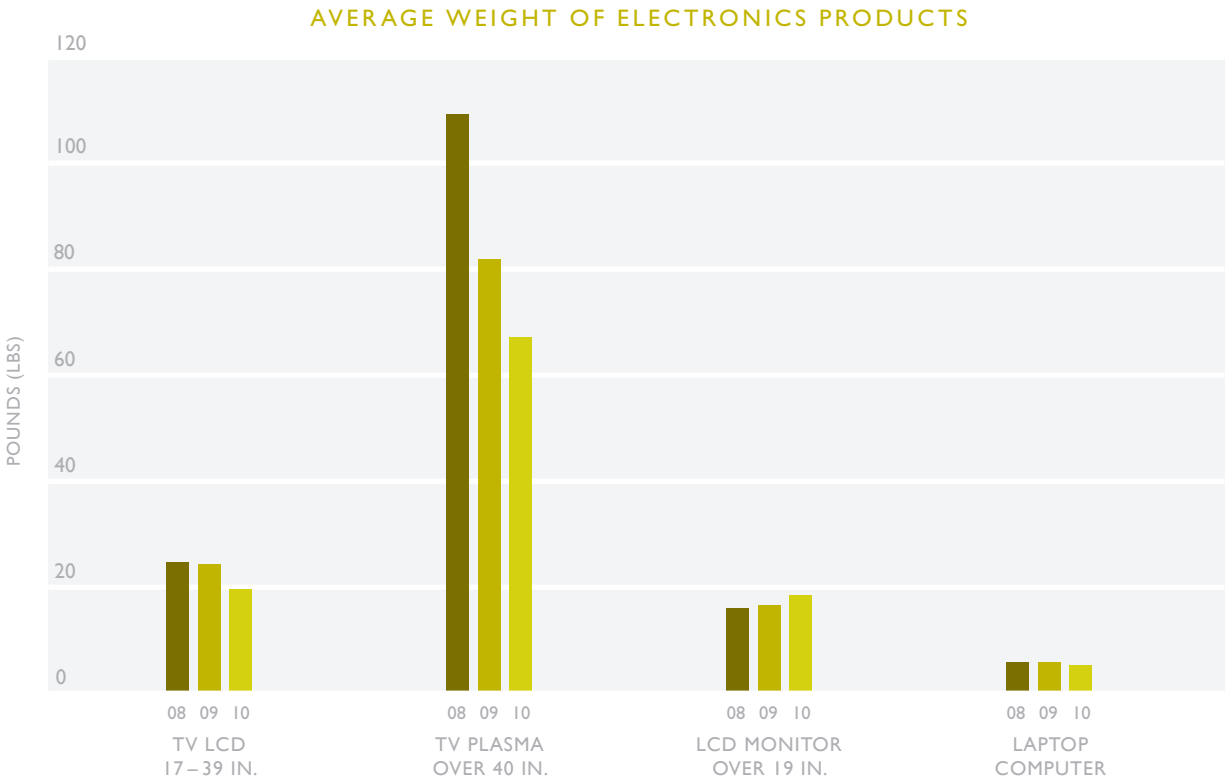


Figure 1: Average weight of a select group of electronics product types over time. This data was gathered by the WMMFA during the years indicated.

Motorola Goes Green with CITRUS™

In 2010, **Motorola** launched its latest green phone, the CITRUS™. Powered by Android™ 2.1, the Motorola CITRUS delivers an affordable, entry-level, customizable smartphone in a compact design that is environmentally conscious. CITRUS features a housing made from 25 percent post-consumer recycled plastic. The new, recycled plastic saves 20 percent of the energy needed to make the phone housing when compared with standard plastic. It also results in less landfill waste and encourages more recycling by creating a market for used materials.

The phone is also certified CarbonFree® through an alliance with Carbonfund.org™. Motorola offsets the carbon dioxide generated to manufacture, distribute and operate the phone during its lifetime through investments in energy efficiency and reforestation. Additionally, the phone is BFR- and PVC-free, is made of 99 percent recyclable housing, and comes with an energy-efficient charger.

Growth in Sales of Green Electronics

The CE industry is also designing products to be certified to the Electronic Product Environmental Assessment Tool® (EPEAT) criteria. EPEAT evaluates electronics products relative to 51 total environmental criteria. Products are then ranked in EPEAT according to three tiers of environmental performance — Bronze, Silver, and Gold based on the number of criteria met. Procurement professionals and individual consumers can then evaluate, compare and select electronic products based on their environmental attributes.

48,532,667

EPEAT-certified products sold in the United States in 2009

According to the Green Electronics Council — which manages the EPEAT program — global demand for sustainable electronics has increased. U.S. sales of EPEAT-certified desktops, laptops, and displays grew nearly 10 percent in 2009, to a total of 48.5 million units (see Figure 2). Outside of the U.S., there were nearly 8,500 EPEAT registrations of products. The Green Electronics Council claims that EPEAT purchases in 2009 alone saved more than 10 billion kWh of electricity, which is equivalent to the energy needed to power 900,000 U.S. homes for a year. It will also reduce use of primary materials by 19 million metric tonnes, equivalent to the weight of more than 148 million refrigerators.

By designing sustainable products from the beginning, CE companies get a head start on the road to sustainability.

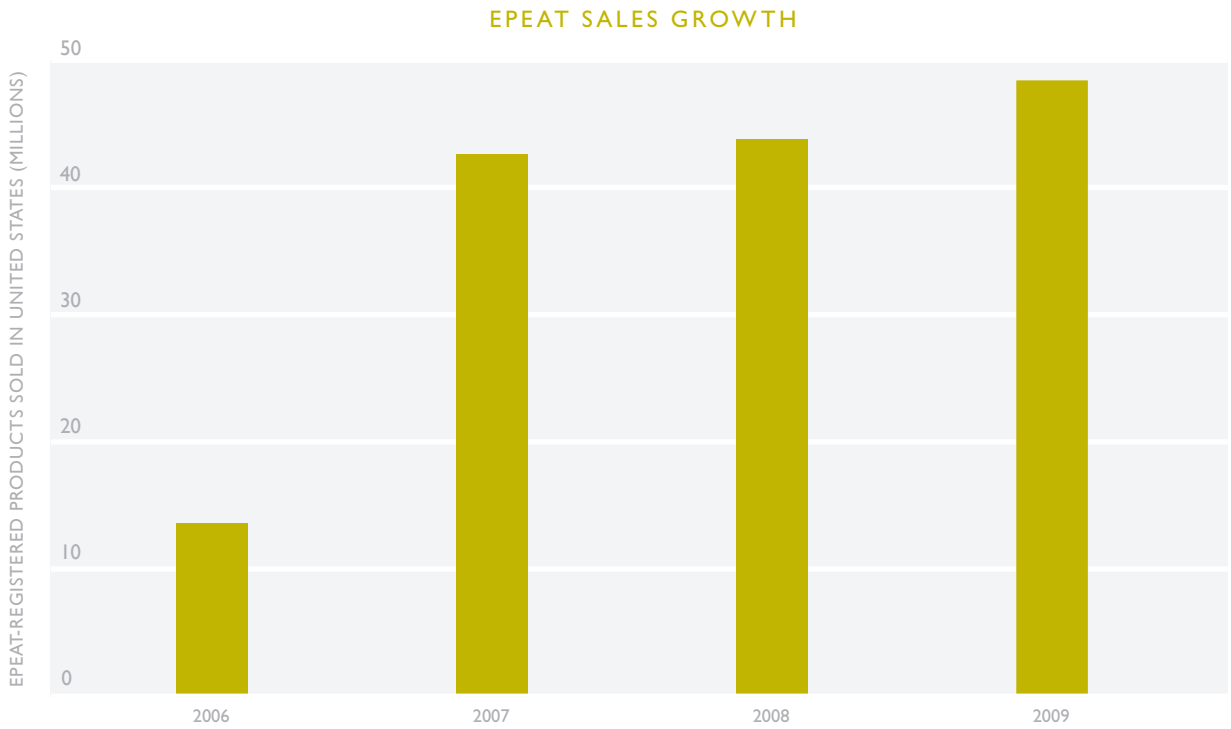


Figure 2: Growth in EPEAT-registered products sold in the U.S.

Aleratec Designs "Green" Lubricant Sheets for Paper Shredders

Aleratec Inc. designed eco-friendly shredder lubricant sheets to maximize the life and performance of paper shredders.

All paper shredders need proper lubrication in order to operate efficiently and prevent premature failure. In the past users had to maintain their shredders with bottles of shredder lubricant. In its shredder lubricant sheets, Aleratec has encapsulated the lubricant into an enclosed sheet which can be fed into a shredder just like a piece of paper. This design simplifies the process and ensures total coverage and that the correct amount of lubricant is used.

The Aleratec shredder lubricant sheets are designed to minimize impact on the environment. Each sheet is composed of sugar pulp, a renewable resource, and recycled paper. The lubricant used is a non-toxic and biodegradable vegetable oil. In addition, proper use of this product will extend the life of shredders, which means fewer shredders in landfills and less energy used to build new units.

Sustainable Packaging Design

Sustainable Packaging Design

The majority of CE products are delivered to retail stores and consumers in some form of packaging. This packaging plays an important function in preventing damage that can occur through handling and transport, but packaging also contributes to the overall environmental footprint of a product. As packaging changes can often be executed without affecting product design, many companies are targeting packaging improvements as a step towards environmental impact reduction.

Shipping Efficiency

Some CE companies, including DIRECTV, are working to reduce the overall volume of packaging by minimizing packaging size, reducing secondary packaging, or packing multiple products in larger containers. By reducing material use and shipping requirements, packaging improvements have a "multiplier" effect in lowering a product's environmental footprint while at the same time cutting costs for both manufacturers and customers.

Packaging Materials

The materials used to create the packaging in the CE industry often include plastic clamshells and other petroleum-based materials like styrofoam. Designers are looking for ways to integrate environmental considerations into packaging design; however, the packaging life cycle is complex, and it can be difficult to determine which materials offer the best environmental solutions. Tools such as Life Cycle Assessment (LCA) and Carbon Footprint Analysis help CE designers compare the environmental effects of different packaging.

DIRECTV Boosts Efficiency by Packing More Products Per Container

DIRECTV's Supply Chain department found an innovative solution to packaging its equipment that saved the company money and helped it to be greener. Previously, DIRECTV shipped receivers and dishes one item per carton, a method that was costly and consumed a large quantity of packing materials. Now, four receivers are shipped in one multi-pack container and its satellite dishes are shipped two or more per container. This new approach has decreased its use of cartons by more than one million in 2009 — a 75 percent reduction in packaging from the previous year. Styrofoam packing materials used to pack its rooftop dish assembly have also been replaced with materials made from paper pulp, which can be recycled. In 2011, all DIRECTV products will be packed with 100 percent recyclable materials.

Many CE companies are switching to renewable materials, including bio-based plastics, or recyclable materials such as cardboard instead of plastic clamshell packaging. In 2009, **Dell** began shipping all Inspiron Mini 10 and 10v netbooks in packaging made from bamboo, a highly renewable and certified compostable material. Dell has now extended the use of bamboo packaging to a number of their Inspiron laptops as well.

The Sustainable Packaging Coalition (SPC), an industry working group with a robust environmental vision for packaging, created a common definition of sustainable packaging to encourage companies to reduce their environmental impact. This definition includes characteristics such as using renewable energy to produce the packaging, utilizing recycled material, and designing to optimize materials and energy. For example, **MeadWestvaco**, a founding member of SPC, offers Natralock packaging that uses less energy and plastic to manufacture for customers in the CE and other industries.

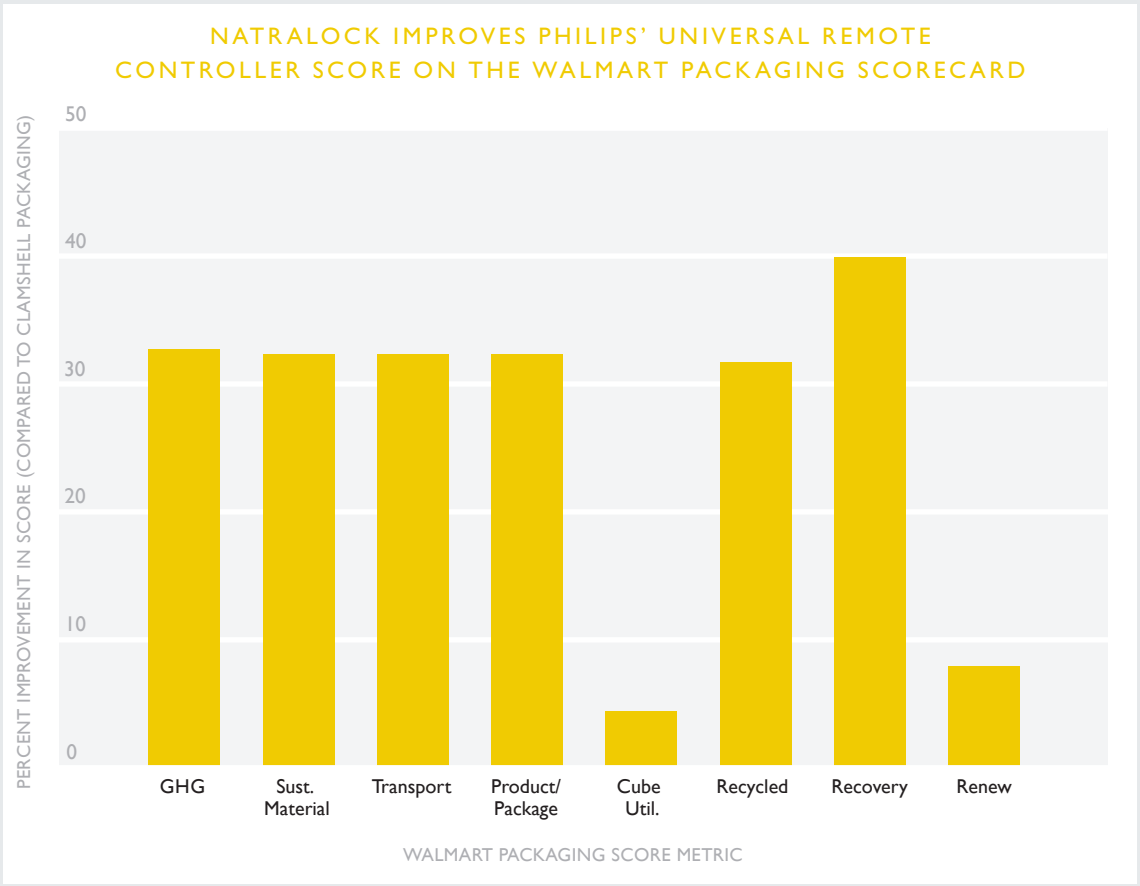
End-of-Life Considerations

As packaging is typically disposed of once the product is in use, end-of-life considerations play a significant role when designing more sustainable packaging. CE companies are using recyclable materials to limit the amount of packaging headed to landfills for disposal, as well as to increase the ease of opening the package. **Philips** switched to recyclable packaging for its Essence toothbrush and saved money in the process.

A product's design and packaging greatly influence its overall sustainability, but a portion of the product's footprint is directly related to the conditions in which it was manufactured and processed. The next section of the report addresses what CE companies are doing to make their facilities more sustainable.

Philips Goes Frustration Free

When **Philips** learned from Amazon.com that its customers were struggling to remove the clamshell packaging on its Sonicare Essence electronic toothbrush, it asked supplier AllpakTrojan to create a new package that was easier to open. Within three weeks, the supplier had designed a new container that addressed Philips' needs and decreased the packaging's environmental impact. The square footage of material used is much smaller, as cardboard mass reduced from 160 grams (g) to 140g and plastic mass reduced from 60g to 2g, plus the cardboard is now recycled and recyclable. In addition, without the fancy printing, shiny cardboard backing and plastic, the packaging is much less expensive. Philips was so pleased with the change that it is looking to switch the packaging for other items and is currently pushing online retailers to adopt this packaging.



MeadWestvaco's Natralock Packaging Beats Out Clamshell

MeadWestvaco's Natralock, an environmentally friendly solution to clamshell packaging, is composed primarily of tear-resistant paperboard made from renewable resources, and can include up to 30 percent recycled content. A third party assessment by Environmental Packaging International compared the environmental impacts of Natralock packaging and traditional plastic clamshell packaging. On average, Natralock packaging showed:

- 70 percent less plastic use;
- 22 percent reduction in total packaging weight;
- 55 percent less energy use (BTU) in manufacturing material; and
- 22 percent less greenhouse gas emission for packaging production.

Philips recently replaced its clamshell packaging with Natralock for its universal remote controllers and has subsequently improved its score on the **Walmart** packaging scorecard. The above graph shows the percent improvement resulting from this switch.

Sustainable Facilities

Image courtesy of Sony.

3 ENVIRONMENTAL PERFORMANCE

Sustainable Facilities

Eco-efficiency is increasingly becoming a key requirement for success in business. Optimizing the use of resources, including energy, water and materials, helps to stimulate innovation and productivity and reduces costs. Reducing the amount of waste and emissions released to the environment also helps to avoid risks and liabilities, improve reputation and brand image, and make employees feel proud of where they work.

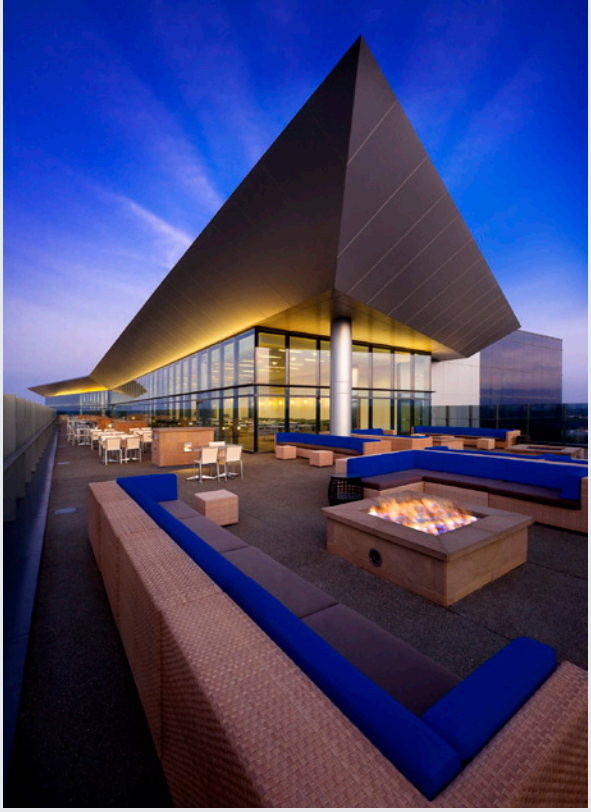
CE companies are at the forefront of developing and using technologies that increase resource efficiency and reduce waste and pollution in their facilities. Below are some examples of how CE companies are leading the way by incorporating sustainable business practices into their operations.

Designing & Constructing Greener Buildings

Green buildings differ from conventional buildings in that they integrate social and environmental goals into their construction and operation to improve indoor air quality and reduce ecological impacts in the surrounding area.

A number of CE companies have designed and constructed their facilities to meet the criteria in the U.S. Green Building Council's LEED certification program — an internationally renowned building rating system that recognizes leadership in environmental stewardship. LEED awards points for meeting specific performance criteria and certifies buildings with improved performance using one of four ratings — Certified, Silver, Gold, or Platinum.

Greener buildings tend to reduce capital and operational costs and promote technological advancement, business innovation and environmental protection.



Sony 'LEEDs' the Way

Sony Electronics Inc. designed and constructed a new U.S. head office building in San Diego, Calif., which was awarded Leadership in Environmental Design (LEED®) Gold certification from the U.S. Green Building Council Institute. The building's design integrates a number of green elements including bicycle racks and dedicated parking spaces for staff who carpool to work or drive fuel-efficient vehicles. In addition, 75 percent of the wood used in framing, flooring and furniture is certified by the Forest Stewardship Council as coming from a sustainably managed forest.

The company also implemented a number of water saving measures, including a system that re-routes water discharged by the air-conditioning system to a fountain in the atrium, and motion sensors for the toilets that flush a small amount of water when the user moves. These efforts are expected to reduce the consumption of water by 47 percent compared to conventional buildings. Sony also designed its headquarters to maximize energy performance by 22 percent by installing automatic light sensors, variable speed drives for A/C units and optimizing the use of daylight as 75 percent of the facility's square footage receives natural daylight. This building was conceived as part of broader commitment by Sony to achieve zero environmental footprint by 2050 with a program known as the Road to Zero.

Reducing Energy Consumption and Greenhouse Gas Emissions

As society takes action to mitigate the impacts associated with climate change, the CE industry faces a challenge. It must continue to meet the world's growing demands for consumer electronics while simultaneously reducing operational energy consumption and associated greenhouse gas (GHG) emissions.

Many CE companies have begun to track their energy consumption, calculate their organizational carbon footprints, and publicly report the findings in annual corporate sustainability reports and/or through GHG reporting programs such as the Carbon Disclosure Project (CDP). Launched in 2000, CDP seeks to accelerate solutions to climate change by harmonizing climate change data from organizations around the world and developing international carbon reporting standards. The data reported by companies is then made available for use by a wide audience including institutional investors, corporations, policymakers and their advisors, public sector organizations, government bodies, academics and the public.

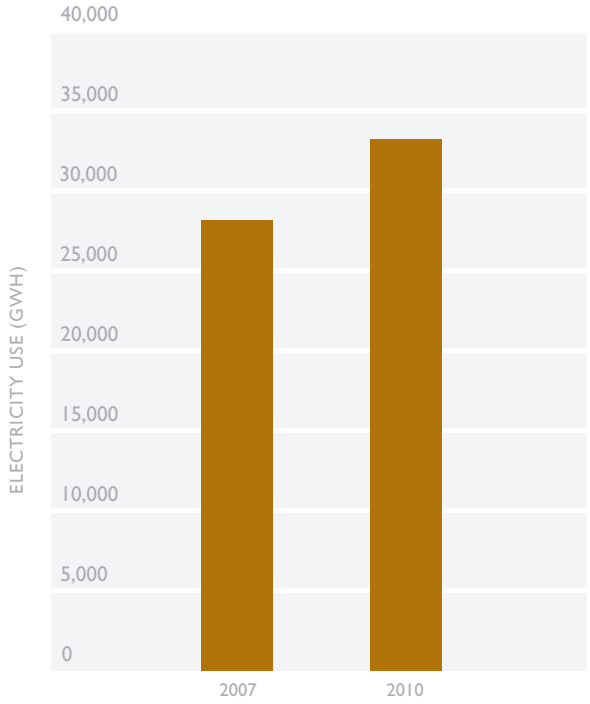


Figure 3. Total amount of electricity consumed in 2007 and 2010 reported to the Carbon Disclosure Project by nine of the 10 largest CE companies by global revenue.[4]

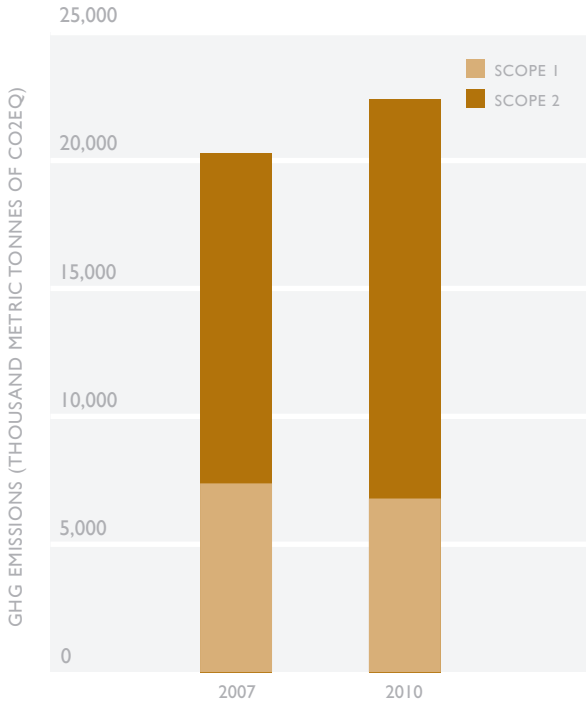


Figure 4. Scope 1 and 2 GHG emissions reported to the Carbon Disclosure Project in 2007 and 2010 by nine of the 10 largest CE companies by global revenue.[5]

Nine of the 10 largest consumer electronics companies by global revenue demonstrate sustainability leadership by reporting to the CDP since 2007[1]. These companies are also improving their CDP reports by increasing the amount and quality of data reported each year. Figure 3 illustrates the top CE companies' electricity consumption and Figure 4 documents the Scope 1 and 2[2] GHG emissions as reported to the CDP in 2007 and 2010 by these companies.[3]

Due to increased demand for consumer electronics, facilities have expanded and production of consumer electronics has increased across the globe. As such, the ten largest CE companies have increased their total electricity use and GHG emissions. To mitigate this challenge, many of these top companies have pledged ambitious absolute GHG emissions reduction targets:

- **Dell** set a GHG emissions reduction target of 40 percent by 2015 from a 2007 baseline;
- **Sony** established a goal to reduce its GHG emissions by 30 percent from operations by 2016 from a fiscal year 2000 baseline;
- **HP** committed to reducing the GHG emissions of HP-owned and HP-leased facilities by 20 percent below 2005 levels by the year 2013; and
- **Nokia** set an emissions reduction target of 18 percent from 2006 levels by 2010.

1. Some companies report their GHG emissions to the CDP annually, while others may submit reports biannually.
2. Scope 1 emissions refer to gases that are emitted directly from sources owned or controlled by an organization (e.g. combustion of fossil fuels by company owned vehicles), whereas Scope 2 emissions are released indirectly as a result of the organization consuming electricity, heat, cooling, or steam.
3. Note: Individual company reports to the CDP may differ in a variety of ways, including but not limited to the following: organizational boundaries, reporting cycle dates and/or calculation methodologies. The CDP is attempting to further standardize its reporting methodologies so that more accurate comparisons can be conducted in the future.
4. Figure includes nine of the top 10 CE companies by revenue as one company did not submit data in 2007.
5. Figure includes nine of the top 10 CE companies by revenue as one company did not submit data in 2007.

To achieve these goals, CE companies are implementing initiatives to reduce fossil fuel energy consumption, including generating and purchasing renewable energy, using cleaner modes of transport and reducing business travel. In addition, CE companies are increasing their operational energy efficiency by designing and installing energy efficient technologies, such as manufacturing equipment, lighting, HVAC and IT systems. CE companies have also made significant reductions in energy consumption at their data centers.

Data Center Energy Efficiency

Data center facilities manage digital information that is essential to the functioning of business, communications, academic and governmental systems. Increasing demand for data processing and storage has caused a growth in global data center capacity and power use that is contributing to global greenhouse gas emissions. In 2006, the U.S. Environmental Protection Agency (EPA) estimated that servers and data centers in the U.S. consumed about 61 billion kWh of energy — equivalent to 1.5 percent of total U.S. electricity consumption. To reduce electricity use, lower utility bills and minimize their environmental impacts, many CE companies are working to reduce fossil fuel consumption and improve data center energy efficiency by:

- utilizing data center infrastructure designs that reduce power loss (e.g. through improved cooling and power conditioning);
- consolidating applications from many servers to one server;
- installing more efficient equipment, including ENERGY STAR qualified servers; and
- purchasing renewable energy and/or reusing waste heat energy.

The industry is also working to develop a common set of tools and metrics for energy efficiency. For example, The Green Grid — a global consortium of IT companies and professionals (including representatives from **HP, Intel, AMD, Dell, Microsoft** and **APC**) — recently developed Power Usage Effectiveness (PUE) and Data Center infrastructure Efficiency (DCiE) metrics. These measurement systems enable data center operators to estimate the energy efficiency of their data centers, compare the results against other data centers, and measure improvements over time. In 2010, the U.S. EPA also announced that stand-alone data centers and buildings that house large data centers can earn the ENERGY STAR label if their energy efficiency performance is in the top 25 percent of their peers.

In addition, many CE members meet each year at the Data Center Efficiency Summit to discuss best practices and new technologies for improving data center energy efficiency. Examples of CE companies that have achieved significant energy and cost savings from gains in data center efficiency include:

- **AT&T** — reduced its energy intensity in 2009 by 23.8 percent compared with the previous year by using 498 kWh per terabyte of data carried on its network. The company has set a goal to further reduce electricity consumption in 2010 relative to data growth on its network by 16 percent compared to 2009.
- **Microsoft** — The Power Usage Effectiveness (PUE) average for the data centers it owns was 1.53 in 2009. Microsoft is working aggressively to reduce this annual average PUE below 1.2 for all new data center design.
- **Intel** — implemented a data center efficiency program in 2007, which involves the consolidation of the company's 130 data centers worldwide into just eight global hubs. To date, Intel has reduced the number of data centers that it operates by 16 percent.

Targeting Waste

CE companies are also creating efficiencies by reducing solid waste generation in their operations by:

- minimizing the total amount of resources used in their operations (e.g. water, paper, raw material and chemical inputs to products, etc.);
- optimizing the use of recycled materials and the reuse of waste materials (e.g. metals) from operations; and
- maximizing the amount of resources recycled from waste products.

Large improvements in resource efficiency have been realized in the design, production and distribution of CE products. For example, **Panasonic** set a target of decreasing waste from its global production activities to zero by 2018 and has already achieved 'zero waste' at its operations in Japan. Small CEA member companies like the **Max Borges Agency** — have also been building a culture of sustainability in the workplace and identifying opportunities to reduce waste in their procurement, research and development, and sales and marketing processes.

Adopting Environmental Management Systems

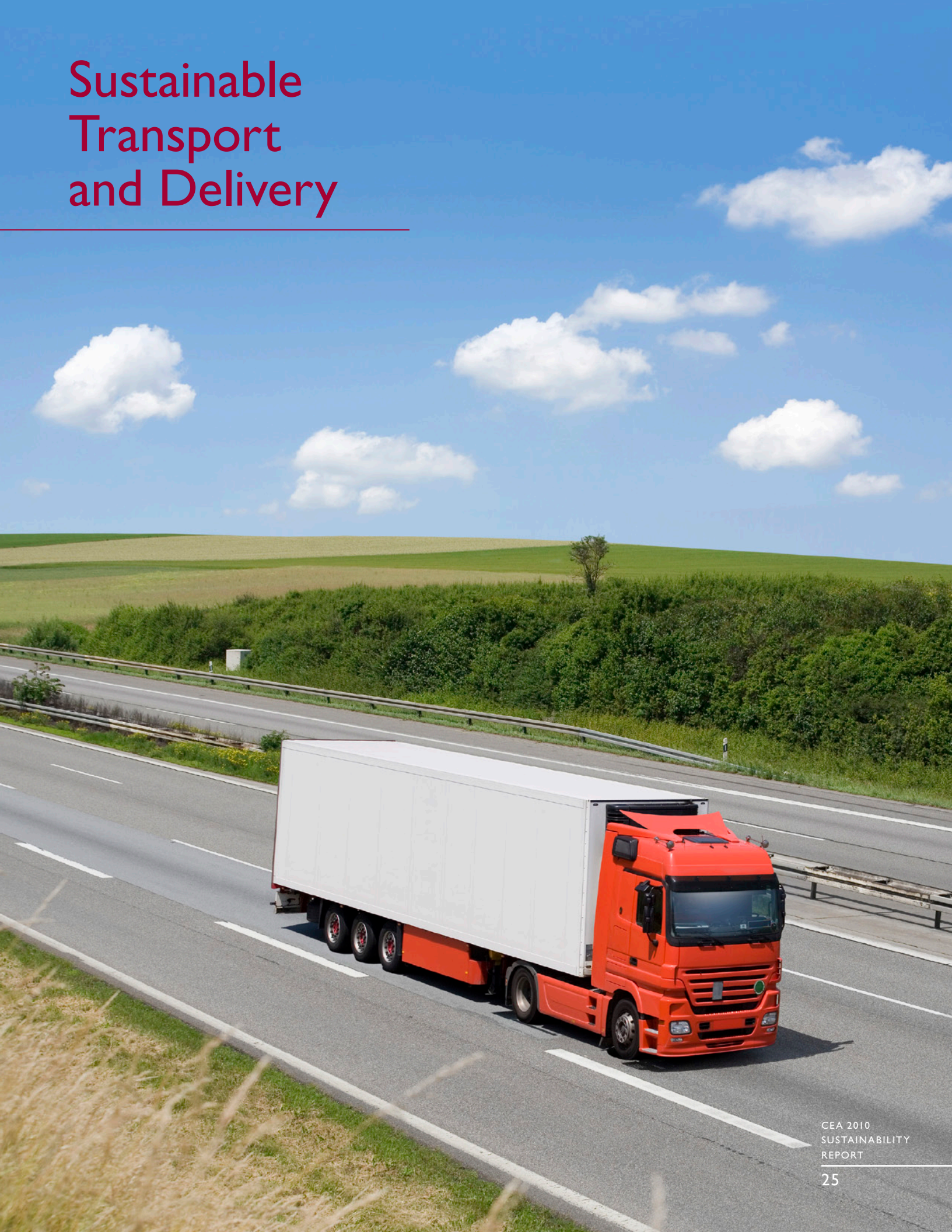
Many companies in the CE industry adopt Environmental Management Systems (EMS) to manage their environmental programs in a comprehensive and systematic manner. Nine of the 10 largest CE companies in our membership from a global revenue perspective have established corporate-wide commitments to ISO 14001 certification, and have publicly reported the number and location of their ISO certified facilities. In addition, leaders in the CE industry are driving continual improvement by requiring their suppliers to implement EMS as well (e.g. **Nokia**) and provide training and support for these suppliers to help achieve their environmental goals.

Max Borges Agency Improves Profitability and Sustainability by Reducing Waste

While small businesses are not always able to dedicate full time staff or significant funds to implement sustainability measures, many Small and Medium-sized Enterprises (SMEs) are taking steps to address their environmental impacts. **Max Borges Agency** is an example of a SME in the CE industry demonstrating leadership in waste reduction. Below are some of the ways that this public relations and social media agency is making its office more sustainable and saving money at the same time:

1. all printers are set to the 'draft' or 'ink saver' option to conserve toner and ink use, resulting in estimated cost savings of $1,600 per year;
2. all printers are set to the double-sided print configuration, saving approximately 120,000 sheets of paper per year;
3. office spaces provide natural lighting during the daytime to reduce electricity use;
4. packaging materials for transporting products are reused;
5. all internal and most client reporting is done electronically to reduce paper use;
6. teleconferencing is used to minimize business travel, resulting in annual cost savings of approximately $100,000;
7. newspaper clippings are reused as filler packaging to protect products;
8. the office building has a strong commitment to recycling; and
9. used computers and other IT equipment are donated to various local organizations.

Sustainable Transport and Delivery



Sustainable Transport & Delivery

Transporting finished CE products from manufacturing facilities to their future owners requires an expansive distribution network of airplanes, ships, trains, and trucks.

In addition to the millions of CE products and accessories that are shipped to consumer channels each month, the CE industry also moves people around, including sales staff and other employees who travel from home to work and to meetings with customers. The air emissions resulting from the fossil fuels consumed through these coordinated transportation and commercial systems represent an important part of the CE industry's environmental footprint.

Smarter Distribution Systems

To keep up with rapid changes in technology, many CE companies historically adopted "just-in-time" order fulfillment systems, shipping products via air between manufacturers and consumers, at considerable economic and environmental cost. Recent years have seen a shift to smarter distribution systems, using a mix of air and sea transportation to meet market needs while keeping costs and greenhouse gas (GHG) emissions low. Combined with innovative packaging designs, which allow more products to be packed into containers and aircraft, this approach has yielded significant reductions in the impact of many consumer products.

Walmart Seeks to Double U.S. Fleet Efficiency

Walmart's Logistics Division is working to double the efficiency of its U.S. fleet by 2015. By putting significant effort into reducing the miles driven and loading trailers more effectively, Walmart has improved fleet efficiency by 60 percent compared to their 2005 baseline. Including all carriers, 77 million more cases were delivered in 2009 than the year before while eliminating more than 100 million miles. By driving fewer miles, Walmart's fleet avoided emitting approximately 145,000 metric tonnes of CO_2 into the atmosphere.

When transporting goods overseas, shifting from air to ocean transport significantly reduces GHG emissions, as each ton of freight transported by ocean produces only about 1/60th of the GHG emissions that air freight produces. CE companies are taking note of this, and are rethinking their approach to order fulfillment to reduce dependency on air transportation. Many CE companies are also looking to reduce the GHG emissions associated with their product shipments by using cleaner vehicles in their fleet, including biodiesel and hybrid company trucks and cars.

CE companies are optimizing their supply chain management and logistics systems to create efficiencies that not only meet customer requirements, but reduce the fuel consumption and GHG emissions from freight facility operations. Walmart set an aggressive target to increase its U.S. fleet efficiency by reducing miles driven and loading trailers more effectively.

SmartWay Transport Program

SmartWay Transport is a collaboration between the U.S. Environmental Protection Agency and the freight sector designed to improve energy efficiency, reduce greenhouse gas and air pollutant emissions, and improve energy security. SmartWay's goals are to reduce the impact of rail and truck transportation on the environment and to help its partners see the rewards to their business. Partners must commit to measuring current environmental performance using the SmartWay transport FLEET (Fleet Logistics Energy and Environmental Tracking) performance model for carriers, improve that performance within three years, and sign the SmartWay Transport Partnership Agreement.

CE member companies have emerged as leaders in the SmartWay transport program:

- **Sharp Electronics Corporation** received a 2009 SmartWay Excellence Award. The company ships 99.9 percent of its ground freight with SmartWay carriers, a 2.8 percent increase from 2007, and has installed a new software system for transportation planning and global availability.
- **Best Buy** also won a 2009 SmartWay Excellence Award after increasing the number of its carriers that are SmartWay partners by 32 percent since 2007 and inspiring 12 of its existing contract carriers to join the SmartWay Transport Partnership. To further reduce its footprint, all Best Buy retail locations prohibit idling while on Best Buy property, requiring drivers to shut off trucks during the loading/unloading process.
- **HP** was the first company out of almost 1,000 SmartWay partners to include the SmartWay logo on its product packaging. All HP products in the U.S. and Canada are shipped using a network composed entirely of exclusive SmartWay-certified surface transportation carriers.

Reducing Emissions from Employee Commuting

In addition to reducing the transportation impact of their products, several CE companies are taking action to cut emissions associated with employee commuting and employee/customer business travel. One recent trend is employer-sponsored shuttles. Over 13,000 **Microsoft** employees have ridden the company's connector bus program in the Seattle, Wash. area, helping to remove over 18 million employee car miles from Seattle area roadways and avoid an estimated 17 million pounds of CO_2 emissions since the program began in 2007.

Other CE companies encourage the use of alternative-fueled vehicles or enable their employees to telecommute. As described below, **AMD** chose to install electric vehicle (EV) charging stations in its parking lot, while **Cisco** installed more than 800 TelePresence units in conference rooms and offices around the world, allowing almost a third of the company's 70,000 employees to telecommute at least one day per week using Cisco Virtual Office.

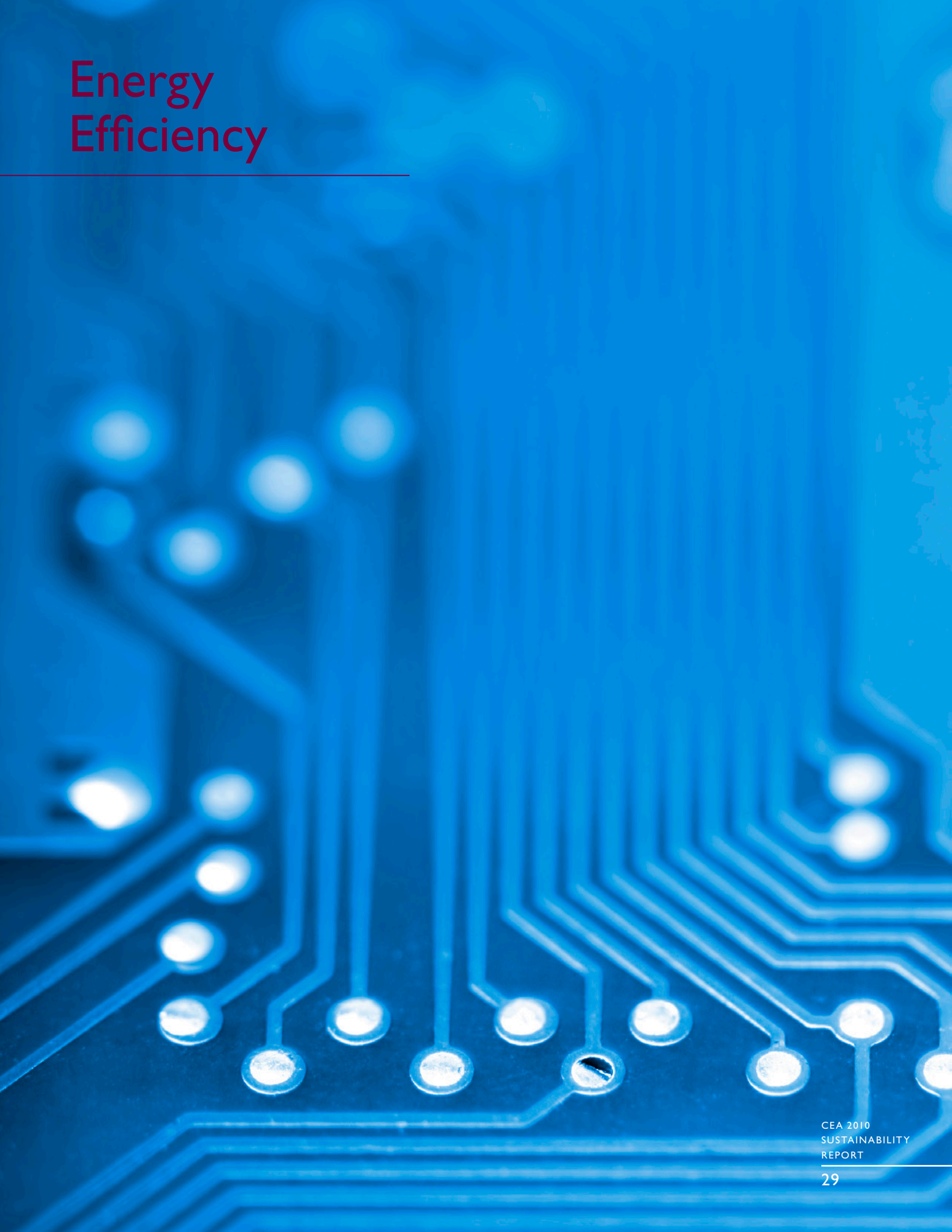
By promoting more sustainable commuting alternatives for employees and enabling more sustainable behaviors in their customers, CE companies are reducing their overall carbon footprint and encouraging more sustainable lifestyles in, and outside, of work.

AMD Charges Up Employees with EV Charging Stations

In a classic "chicken or egg" scenario, many people have expressed concerns about buying an electric vehicle (EV) before knowing the charging infrastructure exists, while cities and businesses are hesitant to install charging stations until EVs are on the road.

AMD, a semiconductor design company, is taking leadership to solve this dilemma by installing EV charging stations at its Austin, Texas and Sunnyvale, Calif. campuses. Since these are AMD's two largest U.S. facilities and are located in areas selected for the federally funded EV infrastructure pilot, the company believes that this initiative will serve as an example for other businesses in these areas and will tip the balance for those employees considering a purchase of an EV.

Energy Efficiency



Energy Efficiency

Designing and manufacturing energy efficient products and services is an important focus of the CE industry as power consumption during product use is one of the most significant sources of environmental impact over the product's life cycle.

The number of CE devices used in the average U.S. home has grown significantly over the past few decades — although the average number has remained constant during the last five years.

CE products such as computers, TVs and DVD players are common in most households and CEA estimates that these products represent about 12 percent of U.S. residential electricity consumption and 4.4 percent of total U.S. electricity consumption[1].

To improve the efficiency of CE products, companies like **AMD** are developing new technologies using more efficient power supplies, components that require less power, and power management software to intelligently budget power, as well as combining formerly separate features and functions into a single device. CE products that use less energy reduce the demand for electricity and/or batteries, provide cost savings for customers in the operation of the product, and help to reduce harmful emissions often associated with the generation and use of electricity.

[1] *Energy Consumption by Consumer Electronics in U.S. Residences.* Report to the Consumer Electronics Association, December 2007

Helping Customers Find Energy Efficient Products

Eco-labeling programs help consumers evaluate and compare electronics products based on their environmental attributes. The ENERGY STAR® program developed an eco-label for CE products that provides independent, third-party verification that products meet strict energy efficiency guidelines set by the EPA and DoE. The eco-label helps consumers compare and choose products that will save energy and money, and reduce GHG emissions.

According to the EPA, more than 27,000 CE product models currently meet ENERGY STAR Specifications. In 2008, the EPA estimated that the sale of these products saved 19.2 billion kilowatt hours (kWh) of energy and avoided 3.6 million metric tons of GHG emissions. Figure 5 shows the average improvement in energy efficiency that has been achieved by products meeting the latest ENERGY STAR specification, and Figure 6 demonstrates the sales of ENERGY STAR products since 2000 (as estimated by the EPA).

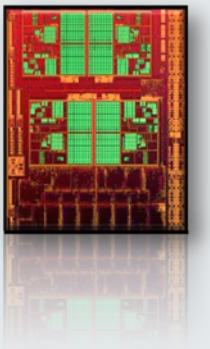
The Electronic Product Environmental Assessment Tool, or EPEAT, is a widely adopted and comprehensive environmental standard for CE products. Among a variety of eco-design criteria, the EPEAT rating system also includes energy efficiency as a consideration and provides business-to-business purchasers with a way to compare the energy consumption and other environmental attributes of competing products.

PRODUCT CATEGORY	AVERAGE ENERGY SAVINGS ABOVE STANDARD PRODUCT
Audio equipment	30%
Battery charging systems	30%
Set-top boxes	30%
TVs/DVDs/VCRs	35%
Digital-to-analog converter (DTA)	50%
Telephony	55%

Figure 5: Average consumer energy savings of select ENERGY STAR qualified CE product categories

YEAR	NUMBER OF PRODUCTS SOLD
2000	50 million units
2007	850 million units
2009	1.40 billion units

Figure 6: Number of ENERGY STAR qualified CE products sold since 2000.



AMD Carbon Footprint Case Study

The **AMD** Fusion™ family of Accelerated Processing Units (APUs), introduced in late 2010, is a new generation of processor that combines the central processing unit (CPU), the graphics processing unit (GPU), and the Northbridge chipset onto a single chip. While APUs were developed to deliver a superior PC experience, they also can provide tangible environmental benefits. By eliminating the need for chip to chip links, and by introducing new holistic power management techniques, APUs are designed to be resource and power efficient. A study performed by AMD found that an APU reference system offered significant life cycle carbon footprint benefits (up to a 40 percent reduction in GHG emissions) when compared to a reference system that had current generation AMD CPU, GPU and chipset technology.

Analogix Transmitter Reduces Overall Energy Consumption of Mobile Devices

In 2009, **Analogix Semiconductor Inc.**, a manufacturer of analog and mixed signal devices for the digital media and communications market, launched an ultra-low power High-Definition Multimedia Interface (HDMI) transmitter that allows users to transmit high-definition content from portable media devices (e.g. MP4 players, digital cameras and camcorders, smart phones, etc.) to flat-screen TVs and other displays without draining the battery. As a part of its CoolHD™ family of products, ANX7150 is the world's first HDMI transmitter device that recovers power that is normally wasted and consumes virtually zero power from the batteries of the handheld devices. The new transmitter reduces the draw on the battery by more than 95 percent, extending the battery charge life of handheld devices and reducing overall power consumption. In March 2010, the company received an award for its zero-power ANX 7150 HDMI transmitter at the fourth annual China semiconductor innovative products and technology award ceremony.

STMicroelectronics Reduces Energy Consumption of Products in Use

STMicroelectronics (ST) continues to develop innovative technologies that reduce energy consumption and optimize power use in consumer electronics. In 2009, the company estimated the potential energy savings of CE products (i.e., set top boxes, digital TVs) containing the newest generation of more efficient ST microchips. The study found that the energy consumed by both the microchips themselves and their final applications would result in energy savings of 30TWh per year. For example, when the new microchips were used in lighting and an automobile application they were found to enable energy savings of around 13TWh and 22TWh, respectively. These products are helping to reduce energy demand and consumer impacts on climate change.

Maximizing Battery Life

For mobile devices that draw the majority of their power from batteries, many CE companies such as **Analogix** have focused on incorporating energy-saving and power management features that maximize battery life. Increasing the lifespan of batteries not only saves energy, but also helps to reduce the generation of hazardous waste, as most batteries contain heavy metals and corrosive electrolyte solutions. In addition, some of the mobile power management techniques such as voltage/frequency scaling and power islands are being broadly adopted in non-mobile electronics product categories, such as computers.

Panasonic Develops Energy Efficient Power Generation Systems for Households

Panasonic is working to leverage the use of solar panels, fuel-cell co-generation, battery storage, home energy management, and other energy-saving technologies to help customers achieve a low carbon emissions lifestyle. For example, the Panasonic home fuel cell co-generation unit allows a homeowner to generate electricity using their existing natural gas supply, capture the heat that is normally a waste by-product of the process, and use it to heat the home or create and store hot water. Panasonic is also producing solar cells that will allow homeowners to produce power from sunshine. Generating electricity at the point of consumption eliminates most of the energy loss that occurs when power is transmitted from remote sites to buildings using power lines — in fact, Panasonic's home fuel cell is estimated to be about 85 percent efficient compared to the distributed grid mode, which is only 44 percent efficient. Since it is anticipated that these two products will produce more power than is immediately needed during the day, Panasonic has also developed large-scale home storage batteries that will store excess power to be used at night or on cloudy days. In addition, Panasonic has developed a home energy management system that links products and power sources to optimize overall performance.

Developing Ways to Generate and Use Renewable Energy

In addition to increasing energy efficiency, CE companies are reducing fossil fuel energy consumption by designing products powered by sources of renewable energy. For example, a number of solar chargers are being developed to power a wide variety of consumer electronics, such as cameras, digital music players, mobile phones, and even laptops. One such product is **Regen Inc.**'s product ReNu, an innovative portable solar panel that can power a number of personal electronics products including iPhones via a USB plug. CE companies such as **Panasonic** are also developing clean energy systems such as home fuel cells and solar panels that enable homeowners to further reduce their energy bills.

CEA is actively engaged in research on the trends in energy consumption of consumer electronics and is currently updating a report from 2007 titled, *Energy Consumption by Consumer Electronics in U.S. Residences.* The final report documenting recent trends in energy consumption of various CE products will be released on CEA's website in spring 2011. CE companies know that innovation, competition and cost-savings are major drivers of energy efficiency and will continue their improvements and contributions in this area.

eCycling

eCycling

CEA estimates that the average U.S. household contains 25 discrete CE products — televisions, computers, cell phones, gaming systems, DVD players and other CE devices. Eventually these products reach the end of their useful lives and should be recycled.

In developing countries, there have been cases of used electronics being disposed of improperly. In addition, used electronics present a significant global resource issue due to its rich composition of metals, plastic and glass. Without capturing and recycling the materials in these products, society is missing an important resource conservation and recovery opportunity. Because of these factors, proper collection and recycling of electronics is a high priority for the CE industry.

As the producers and distributors of these products, the CE industry knows it shares responsibility for recycling electronics, also known as eCycling. Ensuring that used CE products are managed responsibly at end-of-life is challenging, however, as electronics products are widely distributed around the country and their collection is largely dependent upon consumer behavior. To address this challenge and further improve the way CE products are managed at end of life, CE companies are taking the following steps:

- Incorporating policies, innovative design, and programs related to product stewardship into core business strategies;
- Sponsoring the more than 5,000 permanent collection sites nationwide to make it easier for consumers to dispose of used products in an environmentally responsible manner (specific collection locations can be found at DigitalTips.org);
- Developing and implementing electronics recycling standards; and
- Investing in improving the availability of collection sites nationwide.

Best Buy Launches First Nationwide Retail eCycling Program

In 2009, **Best Buy** launched the first nationwide retail CE recycling "take back" program in the U.S. The program has received positive feedback from consumers, illustrating the need for a place to easily and responsibly recycle old electronics. Using the slogan "no matter where you bought it, we'll recycle it", Best Buy's in-store take back program accepts products such as TVs, DVD players, computers, printers, and other small products for recycling regardless of where they were purchased, what brand they are, or how old they are (with some exceptions). Each store has also set up free kiosks that accept additional items including spent inkjet cartridges, rechargeable batteries, CDs/DVDs and gift cards. In addition, the company has started a trade-in program that allows customers to trade their used products for a Best Buy gift card worth the value of the item. As a result of these efforts, Best Buy has recycled more than 100 million pounds of consumer electronics collected at its more than 1,200 store locations.

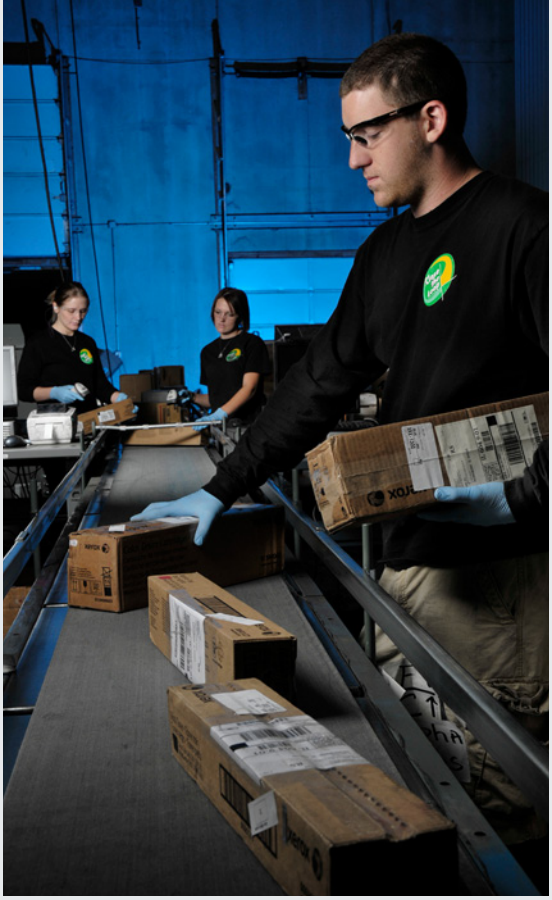
Incorporating Product Stewardship into Core Business Strategies

To promote best practice and consistency in product stewardship approaches across the industry, CEA has developed a set of guiding principles related to the management of used electronics:

1. Electronics should be recycled responsibly at end-of-life. Recycling electronics is important as a resource conservation and recovery issue.
2. A national initiative is needed to strengthen and make sustainable the infrastructure established in partnership with all parties on a Federal, state and local level.
3. All parties must be held to high industry practices, accountability and standards, including strict, responsible controls that protect human health and the environment.
4. Electronics recycling programs should be convenient to encourage participation by the public. Flexibility in the establishment of programs is necessary.

Government bodies in the U.S. are also driving the responsible management of used electronics. To date, twenty-four states in the U.S. have enacted various forms of electronics recycling mandates. However, many leading CE companies are moving beyond compliance programs and are incorporating recycling and take-back initiatives into their core business models. Policies and programs that go above and beyond regulatory compliance give companies a competitive edge by enhancing their brand reputations, strengthening partnerships with stakeholders throughout the value chain and creating new business opportunities.

More than 5,000 locations in the U.S. have been established to collect consumer electronics for recycling.



Xerox Partners with Close the Loop

Xerox partnered with Close the Loop, one of the world's largest recyclers of imaging supplies, to help its customers return and recycle used toner and ink cartridges. Beginning in 2010, customers in the U.S. will have the ability to place used supplies into a collection box, print a free-of-charge shipping label, and send the box to 'Close the Loop'. Over the past 19 years, Xerox's continued collaboration with its customers has kept more than 143 million pounds of cartridges, bottles, and waste toner out of landfills. This new recycling effort, which expands Xerox's efforts to reach its ultimate goal of zero waste, is an extension of the company's larger Green World Alliance program. Launched in 1999 as a rebranding of its original One World Campaign that began in 1991, the Green World Alliance targets consumables-related waste reduction and environmental stewardship.

Expanding the E-Waste Collection Infrastructure

CE companies recognize that collecting and recycling electronics products is an important resource conservation issue and is important to customers. Recycling efforts significantly reduce the amount of electronics going to landfills and reduce the environmental impacts required to mine raw materials for the production of new products. In 2009, CEA estimated that electronics recycling efforts of manufacturers and retailers in the U.S. diverted more than 200 million pounds of electronics from landfills.

In 2009, CEA estimated that the electronics recycling efforts of manufacturers and retailers diverted more than 200 million pounds of electronics from landfills.

Dell & Goodwill Form Partnership to Enhance Recycling Efforts

In 2004, **Dell** partnered with Goodwill Industries International in Austin, Texas to form Dell Reconnect, a program that enables consumers to drop off used electronics for recycling, free of charge. Today, Dell Reconnect operates more than 2,200 U.S. and Canadian Goodwill collection locations for electronic products such as PCs and computer accessories. To date, Dell Reconnect has diverted more than 170 million pounds of electronics from landfills and created about 250 "green jobs," with Goodwill employees managing the collection and disassembly of the equipment. All donated equipment meeting Dell Reconnect's criteria is resold, and devices needing repair are either refurbished or broken down into parts to be recycled by Dell partners.

Note: The type of CE products that are accepted varies at each location. Number does not include locations that recycle only cell phones.

CE companies such as **Panasonic, Toshiba** and **Sharp**, as well as retailers like **Best Buy**, are also working to develop and expand the collection infrastructure for e-waste. These efforts make recycling easy and convenient for consumers, help salvage waste materials that can find new life in other applications, and bring new customers into retail stores. In 2010, CEA estimated that more than 5,000 locations in the U.S. had been established for consumer electronics recycling.

Improving Electronics Recycling Standards

Recently, important steps have been taken to increase the safe reuse and recycling of CE equipment. Organizations recycling electronics can now be certified to a set of responsible recycling standards by an accredited, independent third party. These standards outline a number of best practices related to legal compliance and management systems for the environment, health and safety. They also require that the entire process is transparent and that records and documentation of electronics going for recycling and reuse are available to customers who request them.

Examples of programs promoting best practices in eCycling include the Responsible Recycling (R2) Practices for Use in Accredited Certification programs and the e-Stewards Certification program. The CE industry supports the movement toward third-party recycler certification and encourages consumers to choose electronics recyclers that are certified by a credible program. As with all vendor arrangements, CEA encourages its member companies to think carefully about their own recycling requirements and needs that go beyond these existing certification programs.

Investing in Consumer Education

CE companies are working to educate consumers on the importance of reusing and recycling electronics, and about the options for safe reuse and recycling of these products. In addition to advertising and education programs, many CE companies that offer take back programs or sponsor recycling events also provide resources on their websites that allow consumers to search for the closest drop-off location in their area.

CEA also launched a website called DigitalTips.org that helps consumers find electronics recycling sites across the U.S. As a result of these and other consumer awareness campaigns, a recent CEA survey found that more than half (58 percent) of U.S. adults currently said that they know where they can recycle CE products. The CE industry supports a concerted effort on consumer education to increase overall awareness and the total pounds of equipment recovered and recycled each year.

> Approximately 58 percent of adults in the U.S. said they know where they can recycle CE products.

Samsung Shows Leadership in eCycling

In 2008, **Samsung** kicked off Samsung Recycling Direct, a voluntary recycling program in the U.S. that collects used TVs, camcorders, printers, notebook PCs, and other electronics regardless of brand. The program has grown from 175 drop-off locations when it began, to more than 1,100 locations nationwide — a six-fold increase in less than two years. The program also includes a national mail-back program, and numerous collection events. In 2010, Samsung was the first electronics manufacturer to become an e-Steward Enterprise, demonstrating industry best practices in electronics handling. Through the e-Stewards process, Samsung has partnered directly with select recycling companies who share Samsung's principles for responsible management of electronics material such as: no incineration, no solid waste landfilling, no prison labor and no export to developing countries, consistent with the Basel BAN Amendment. In 2010 alone, Samsung has collected and reused/recycled more than 45 million pounds of electronics — up from three million pounds of used electronics processed in 2008.

Social Contributions

7 SOCIAL PERFORMANCE

Social Contributions

A growing number of CE companies recognize that in addition to reducing their environmental footprints, they can make an important contribution to the well-being of the local and global communities in which they operate.

Companies who contribute to community development through charitable donations and employee volunteerism initiatives improve the welfare of the local community, and through a cycle of social sustainability, the welfare of their own employees. In addition, CE companies, due to the products they create, have the potential to increase the standard of living for millions of people across the globe by increasing access to information.

Giving Back

Through annual charitable donations, CE companies are giving back to the communities that provide the human and natural resources they require to operate. In 2009, the ten largest CE companies by global revenue donated $882 million, in both cash and CE products, to support activities that enhance local environments, social well-being and/or economic development. **Microsoft** contributed $99 million in cash and

$882m

Value of cash and products donated by ten largest CE companies by global revenue in 2009

Photo courtesy of the City of Livingston, Mont.

Kodak links American Greenways and Photovoice Journalism

The **Kodak** American Greenways program, a partnership of Kodak, The Conservation Fund, and the National Geographic Society, has awarded more than 700 seed grants across the U.S., totaling roughly $850,000, to support the development of community-based, action-oriented greenways projects. The grants are designed to stimulate the planning and design of greenways in communities working to preserve open space, strengthen wildlife habitats, improve water quality, and provide economic and recreational opportunities for people of all walks of life.

Kodak is also bringing the power of photovoice journalism to the greenways movement. Beginning in 2010, the company is donating digital imaging equipment to some American Greenways grant recipients to document their preservation, construction, and community use activities and will share the resulting photovoice galleries throughout its social media outlets. By doing this, Kodak hopes to raise the visibility of these groups.

$504 million in software while **Samsung Electronics'** social contributions, including that of its subsidiaries, amounted to approximately $127 million in 2009. Corporate giving has long been a part of the legacy of CE companies.

Employee volunteer programs are growing in number, as CE companies are finding that people are more inclined to work for companies who encourage giving back. These programs also serve as a liaison between employees seeking to donate their time and the community projects that are in greatest need of support. A few examples of CE companies that leverage their expertise and desire to give back to the community include:

- Volunteerism is part of the culture at **Sony of America** companies where each employee is given the option of taking two paid days a year to perform voluntary service to the community or a non-profit cause. On SONY (Some One Needs You) Day, more than 24,000 Sony employees participate in a global day of volunteerism.
- **Texas Instruments** partners with the Center for Nonprofit Management to provide classes on nonprofit legal obligations, fundraising and other basic tenets of board service for its Dallas-based employees. The company also hosts an internal website dedicated to employees serving in the community and provides regular educational materials with tips and guidance on effective board membership.
- Through **IBM's** On Demand Community Initiative, the company encourages volunteerism by training employees and retirees on IBM technology tools targeted for non-profit community organizations and schools.

Contributing to Economic Development

CE products can have a significant impact on the quality of life in disadvantaged or rural communities. *The Information Economy Report 2010* published by The United Nations Conference on Trade and Development, describes how improved access to information and communication technologies, especially mobile phones, in low-income countries can

Nokia's Ovi Life Tools Improves the Lives of Millions

Nokia launched Ovi Life Tools in India during July 2009, in response to research showing that nearly half of emerging market customers would rather connect to the Internet over a mobile phone than via a computer. Ovi Life Tools enables customers to do just that, thus providing access to important agricultural, educational and healthcare information as well as an entertainment service all via their Nokia mobile phone.

The service strives to improve the quality of life for those in emerging markets. For instance, the service provides farmers in developing countries with accurate and regular information on weather and availability of seeds, fertilizers, pesticides, and prevailing market prices for produce. Ovi Life Tools also enables families to access health and nutritional information through the healthcare service, and enables its users to even learn English through the educational offering. Ovi Life Tools is available in India, Indonesia, and China and also includes the recent launch of the service in November 2010 in Nigeria. It currently has 6.3 million users in these four markets.

help alleviate poverty. According to the UN, 6 in 10 people around the world now have mobile phone subscriptions, signaling that mobile phones are the communications technology of choice, particularly in poorer countries.

Internet use more than doubled from 2002 to 2009, from 11 percent to an estimated 23 percent. The increased use of the Internet and mobile phones enables family merchants, small companies and start-ups to emerge, sellers to meet buyers, and education to reach students, all of which contribute to economic development in emerging markets. As an example, **Nokia**'s Ovi Life Tools application allows mobile phone users to access information about agriculture, education, health care, and entertainment.

Helping Achieve the Millennium Development Goals

The UN Millennium Development Goals (MDGs) have become an important driver for the social contributions made by CE companies. The MDGs are eight anti-poverty goals that UN member nations are striving to achieve by 2015, including ending poverty and hunger, universal primary education, gender equality, child health, maternal health, combating HIV/AIDS, environmental sustainability, and global partnerships. In their Corporate Social Responsibility reports, many CE companies refer to activities they have underway to support the MDGs. **Sony** partnered with the UN Development Programme and other local partners to deliver powerful social messaging on HIV and AIDS education and counseling to vulnerable communities during the FIFA World Cup. The company set up large TV screens in areas of the world where TVs are scarce and broadcast twenty matches live to residents for free.

Intel is also contributing to the MDGs with its Intel® Teach Program, which helps teachers integrate technology into their lesson plans.

CE companies are documenting leading social and environmental initiatives like these in corporate sustainability reports and sharing these with stakeholders. The next section describes this growing trend and the role it plays in enhancing corporate transparency.

Intel Empowers Teachers Around the World

Intel believes that education is the key to global competitiveness and individual success. The Intel® Teach Program helps teachers become more effective educators by integrating technology into their lessons, promoting problem-solving, critical thinking, and collaboration skills among students. Through the program's portfolio of professional development offerings, teachers learn about how, when and where to incorporate technology into the learning environment. With more than eight million teachers trained in over 60 countries, Intel Teach is the largest, most successful program of its kind. The program is part of the company's commitment to elevate K-12 education worldwide by giving teachers the tools and resources they need to strengthen the community and change lives.

Corporate Sustainability Reporting

Corporate Sustainability Reporting

In addition to annual corporate financial reporting, many companies now publish sustainability reports that address how societal trends are affecting their company, and how their company's presence and operations are affecting society.

Companies use their sustainability reports as a vehicle to communicate information in a proactive and transparent way to a broad group of stakeholders including shareholders, communities, customers, employees and regulators.

This demand for transparency from stakeholders is growing and CE companies are rising to the challenge. All 10 of the largest CE companies by global revenue issue reports on their websites documenting their corporate environmental and social performance.

All 10 of the largest CE companies by global revenue issue public sustainability reports using guidance from the Global Reporting Initiative.

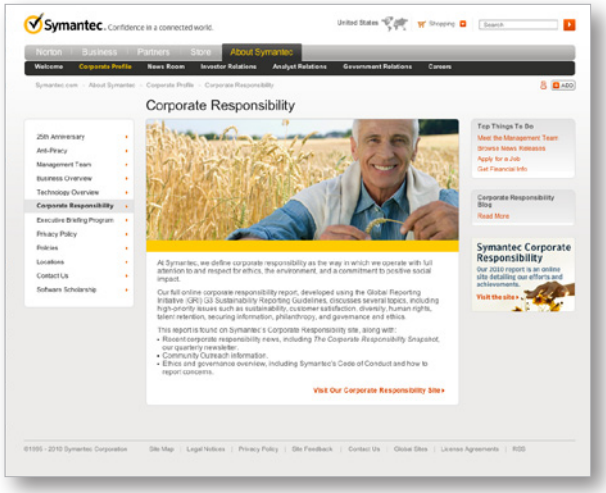
All 10 of these companies also prepare their reports using guidance from the Global Reporting Initiative (GRI), a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework. The GRI framework sets out a number of principles and indicators that organizations can use to measure and report their economic, environmental, and social performance in a standardized way. This benefits reporting organizations and those who use report information alike

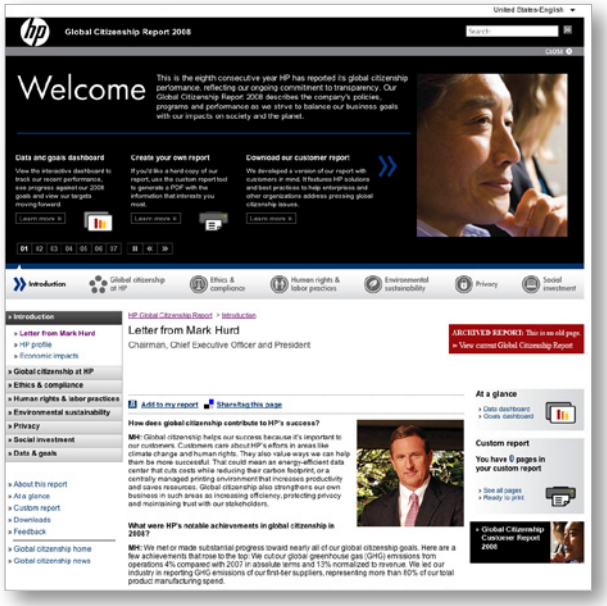
CE companies are also being recognized for their sustainability reporting efforts:

- **Dell** received a Commendation for Emerging Issues Reporting in its *2008 Corporate Social Responsibility Report* from Ceres and the Association of Chartered Certified Accountants (ACCA) Canada.

- **Symantec** won Best First Time Report for its *2008 Corporate Responsibility Report* from Ceres and the Association of Chartered Certified Accountants (ACCA) Canada.
- **HP** won Best Carbon Disclosure award for its *2008 Global Citizenship Report* from the Corporate Register Reporting Awards (CRRA) Program.

The bar will inevitably rise on what constitutes best practice in corporate sustainability reporting and CE companies will continue to look for innovative and meaningful ways to engage with key stakeholders on their environmental, social and financial performance.





ABOUT THE AUTHORS

Five Winds/PE-International is one of the world's most experienced sustainability management consulting firms. We are also a provider of leading sustainability software technologies, GaBi for product Life Cycle Assessments (LCA) and SoFi for corporate carbon and sustainability data measurement and reporting. Five Winds/PE-International has worked in the consumer electronics sector for over 20 years and remains committed to helping organizations understand, improve, and succeed in the marketplace through sustainability.

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Other Contributors

Special thanks go to all 20 CEA members who contributed case studies and images for this year's report. These examples showcase best practices in environmental and social business performance and bring the CE industry's sustainability story to life.

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ABOUT THE DESIGNER

Rogue Element is a small strategic design agency with big project experience that fuses a passion for creative communication with clients who make a difference. We collaborate with you to visually-charge your message with a uniquely authentic and memorable voice that stands out from the crowd.

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