Environmental Stewardship at Applied Materials

Applied Materials conducts its business operations in a manner that preserves the environment and protects the health and safety of workers, customers and neighboring communities.

Sustainability Policy and Guiding Principles

Applied Materials is committed to growing profitably and sustaining our business in an environmentally and socially responsible manner. We use our resources and technology leadership to enable the creation of products that improve the way people live.
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GUIDING PRINCIPLES

Energy Efficiency

Use energy responsibly throughout our business to reduce impacts on the environment and minimize greenhouse gas emissions by conserving energy, improving energy efficiency and giving preference to renewable over non-renewable energy sources when feasible.

Design for Environment

Design products and services to reduce their consumption of natural resources and energy and generation of waste and emission while maximizing their overall functionality.

Pollution Prevention

Minimize waste generated in our operations by maintaining high rates of reuse and recycling.

Employee and Public Outreach

Promote environmental awareness and engagement among employees and contribute to the development of public policies that lead sustainable development.

Environment, Health & Safety Policy

EH&S Policy for Applied Materials
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Applied Materials conducts its business operations in a manner that preserves the environment and protects the health and safety of workers, customers and neighboring communities.

Applied Materials is committed to complying with or exceeding all relevant regulatory requirements, to prevention of pollution and to continual improvement in the environmental, health and safety performance of its operations, processes and products. Applied Materials encourages its suppliers to improve their environmental, health and safety performance.

All managers and employees are expected to support and take responsibility for the implementation of this policy in accordance with their roles in the organization.

Applied Materials welcomes the input of interested stakeholders to our environmental, health and safety programs.

Key Performance Indicators

On Target | In Progress | At Risk

Key Environmental Sustainability Data	2012 (Goals)	2009	2008	2007	2006
Global GHG Inventory					
Total worldwide direct and indirect GHS emissions by weight (MTCE)	20% reduction	171,474	201,581	214,048	212,313
Other relevant indirect GHG (air travel) by weight (MTCE)	n/a	32,045	34,419	30,217	27,703
Perfluorocarbon (PFC) Emissions (MTCE)*	n/a	1,567	1,175	1,545	622
Percentage of PFC Abatements (%)	50	86	83	84	71
Electricity and Gas Purchases					
Worldwide total - Electricity (GWh)	10% reduction	301	322	346	357
Worldwide total - Natural Gas (Therms)	10% reduction	3,211,417	3,869,576	3,865,206	3,251,630
Worldwide total - Green Power Purchases (GWh)	n/a	29	29	19	13
Percentage of Renewable (Electrical) Energy (%)	15.0	9.8	9.1	5.5	3.6
Operational Waste					
Hazardous Waste (metric tons)	n/a	1,390	1,100	1,950	2,190
Non-hazardous waste (metric tons)	n/a	1,500	1,300	1,560	2,330
Water usage (CCF)	10% reduction	487,500	587,500	558,500	597,000

Recycling					
Bottles, cans, packaging, paper diverted from landfill (tons)	≥80% diversion	9,090	9,169	8,515	6,943
Workforce					
Total workforce worldwide			14,824	14,002	14,072
Health and Safety					
Total case incidence rate (TCIR) (NA only)		1.13	1.21	1.56	1.70
Total lost workday case incidence rate (DAFW) (NA only)		0.17	0.34	0.27	0.29
Total number of work-related fatalities worldwide		0	0	0	0
Number of ergonomic evaluations worldwide			963	1,195	1,175

EHS Management

Consistent with our EHS and Sustainability policies, the mission of the global Environmental Health and Safety (EHS) group is to ensure a safe and healthful work environment; to provide safe and environmentally efficient equipment to our customers; to demonstrates environmental leadership within our communities; and to achieves regulatory compliance that meets or exceeds requirements; all through daily commitment, ownership, and support of Environmental, Health and Safety at all levels of the organization.

The EHS group manages a wide array of programs and services, and provides EHS-related resources in the areas of occupational safety and industrial hygiene, product EHS (i.e. product safety and design for environment), training, construction, fire and life safety, contractor safety, environmental management and health services.

In terms of approach, Applied Materials is fully committed to protecting the environment and controlling Environmental, health and safety risks through the implementation of management systems. Our EHS documentation conforms to ISO 9000 and many of the components of our systems are registered to international management system standards, such as ISO 14000, OHSAS 18000, the Environmental Protection Agency's Voluntary Protection Plan program and others. A key element of an EHS management system (EHSMS) is "checking" on performance and the EHS program at Applied Materials includes an internal audit function. Major operations are audited on a three-year cycle or more frequently as business conditions permit or the circumstances require. In locations outside the United States, our internal auditors are generally accompanied by local regulatory experts. The EHS group also uses various self-assessment tools, including the Electronic Industry Citizenship Coalition's assessments and internally

developed checklists, to regularly evaluate the status of our programs. The EHS group is presently at work to enhance the Applied Materials EHSMS to facilitate integrated external audits, i.e. simultaneously covering ISO 14000, OHSAS 18000 and applicable sustainability standards and measures.

EHS Training

The global EHS training organization is committed in ensuring workers are provided with the knowledge to perform their jobs safely.
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In support of that effort, the Global EHS Training Organization has the following objectives with regard to EHS training:

- Consistent training programs worldwide
- Quality in content and delivery
- Innovative and efficient delivery methods and options
- Reporting global performance
- Support of new business initiatives such as external EHS Training
- Introduction and Reinforcement of our Safety Culture

All managers and employees are expected to attend both corporate and regulatory required training, and/or support implementation of EHS Training Program in alignment with their roles and responsibilities in the organization. Among the training modules required by EHS are the following: all employees receive hazard communication training and an EHS orientation; all managers company-wide take a 4-hour class on Managing Safety at Applied Materials; all design engineers are required to take a design for environment and safety training,

One innovative method of implementing our training program is the Web Enabled Safety Training (WEST) Tool. The WEST Tool is used to assist managers in identifying their employee's or group's safety training requirements and for managers or safety trainers to pull training compliance reports. Using simple prompts that focus upon the activities their employees are engaged in and with drop-down menus, managers are able to determine what training is appropriate and then emails to the employee are automatically generated. The same enables managers to track training completion; managers are expected to use WEST annually.

Ergonomics Program

The goal of the Ergonomics Program is to provide total ergonomic solutions, by identifying employee needs, customer requirements and equipment design standards.
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The program manages and controls risk through education, solution-based processes and company infrastructure, increasing productivity and competitiveness.

Product Safety

Applied Materials' world class Product Safety program ensures that our systems are designed to conform to applicable product regulations and protect personnel, the environment, and customer facilities from harm when the products are operated, maintained and serviced according to instructions.
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This mission is accomplished by assigning expert product safety engineers to work directly with each and every key product unit within the Company. The principal element of the management system is that product EHS standards, including, safety and environmental performance, are built into Applied Materials' product release process; a wide array of minimum standards must be satisfied before a product can be released into the marketplace; the standards are a combination of standards drawn from international organizations (e.g. UL, ANSI, IEC, EN, SEMI and others) as well as best known methods identified through our experience in the field.

The **Design for Environment** (DfE) program ensures that products meet applicable legal and customer requirements as well as enhancing the environmental and energy performance of those same systems. In 2007 Applied Materials declared that we would strive to improve the environmental performance of our products by at least 20% on the average by 2012. We are implementing this initiative by several means: formally incorporating DfE into the release process, meaning business units have to assess the demand for more efficient products and then must establish targets for achieving that kind of improvement; developing internal tools for our engineers to assess the potential of product changes, component selections and other means; actual performance measurement of the products against an industry standard created for that purpose, Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment). Applied Materials' personnel were instrumental in the development of the S-23 standard and we have been recognized with two leadership awards from the International Sematech Manufacturing Initiative (ISMI) for our contributions in that arena. Applied Materials is one of only two suppliers that are members of the ISMI's ESH Technology Center, where we can collaborate closely with many of our customers on DfE advancements.

A recent example of the success created by this initiative is the recently released iSYS™ product. More than 40 percent of electricity consumed in a semiconductor factory or "fab" is in the subfab (where a lot of mechanical equipment is housed).

The **Applied iSYS** platform is the industry's first fully integrated subfab solution for controlling emissions in the semiconductor fab. Networked with an Applied process tool, the iSYS system delivers typical annual savings in power, water and gas consumption equivalent to 200MWh of energy or 220,000 pounds of CO_2 emissions, compared to currently available configurations. Key to the iSYS platform's capability to conserve resources is its unique control system that is synchronized with the wafer processing tool, sensing real-time changes in each process chamber and directing subsystems into pre-defined standby states. Utility metering sensors and software are built into every iSYS platform to enable remote monitoring of cumulative energy savings and to track progress in reaching energy sustainability targets. For these DfE innovations, iSYS was awarded the 2010 Sustainable Technologies Award from the SEMI organization.

Health Services

The mission of our health services function is to protect, maintain, and promote the health, safety, and general well-being of Applied Materials employees in support of an environment that enables employees to achieve their full potential.

Certified occupational health nurses are employed at a number of Applied Materials locations and provide expert first aid in order to prevent injuries from becoming more serious. Additional services include workers compensation case management, aimed at getting employees back to work after an injury as expeditiously as possible, medical surveillance of workers utilizing respirators or working with certain hazardous materials, flu vaccinations, business travel immunization and blood drives. Applied Materials is proud to be a record-breaking company participant in Stanford Blood Bank's Silicon Valley blood drives and we have been the #1 corporate blood donor in Central Texas for three years running.

Certifications

New Corporate ISO 9001: 2008 Integrated Certificate

Group	Registrar	Certification	Expiry Date
All*	DNV	(130KB)	06.21.2013
**New sites will be added to the certificate quarterly - based on three year strategy/roadmap encompassing Applied Materials 108 global locations.* For QMS or ISO scope-related questions, please contact jayen_desai@amat.com. For EHS ISO and OHSAS questions, please contact bill_nichols@amat.com.			

ISO 14001 & OHSAS 18001 Certifications

Site	Standard	Registrar	Certification	Expiry Date
Austin, Montana, Singapore, Italy, Taiwan, Israel, Switzerland	ISO 14001 (2004)	DNV	(123KB)	02.16.2015
Manufacturing, Assembly and Refurbishment - Austin, Texas	OHSAS 18001 (2007)	DNV	(60KB)	11.05.2014

Global Solar Power Generation

The world is changing and at Applied Materials we are taking action to change it for a cleaner, brighter future. Our Energy and Environmental Solutions group is focused on technology and products that help reduce the need to burn fossil fuels and lower greenhouse gas emissions.

Our technology and know-how can be applied to several key areas to make a difference - to improve the way people live in ways that will be beneficial for each of us, as well as future generations. Check back to view the difference we are making as we add new solar installations to our facilities around the world.

The Applied Materials solar arrays have generated over 8600 MWh and reduced over 11 million pounds of CO2. Learn more about the Applied Materials solar arrays and view real time data about each installations energy generation and environmental benefits.

Arques Rooftop and Parking Lot Arrays

Sunnyvale, CA

In October of 2008, Governor of California Arnold Schwarzenegger dedicated the company's nearly 2 megawatt rooftop- and parking lot-based solar installation at its Sunnyvale, Calif. R&D campus. The solar panels are expected to produce power for at least 20 years with a projected pay back in 7-10 years, and the installation represent a long-term financial investment in clean energy.

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Applied Materials is one of the largest purchasers of green power from Silicon Valley Power; at the end of 2009, approximately 21% of the energy used at its Santa Clara facilities came from green power purchases. The company's Sunnyvale solar installation provides an additional 4% of green energy toward the total electricity used on the R&D campus.

Approximately 8,000 wafer-based solar panels were used in an area of more than two football fields in size; the panels are manufactured by Sunpower Corporation using Applied Materials equipment

The tracking system in the parking lot uses GPS technology to follow the sun throughout the day, increasing sunlight capture by 30 percent over conventional systems. The panels are the most efficient on the market today, with the rooftop panels providing 18 percent conversion efficiencies and the parking lot tracker panels providing 20 percent conversion efficiencies. The electricity generated is equivalent to that used by approximately 1,500 homes. The panels replace an amount of carbon equivalent to the emissions of 450 passenger cars for one year or that absorbed by 667 acres of pine forests.

Learn more about the roof top solar array on the Applied Materials' Arques Campus and view real time data about the installation and its energy generation and environmental benefits.

Learn more about the parking lot solar array on the Applied Materials' Arques Campus and view real time data about the installation and its energy generation and environmental benefits.

Harris Branch Array

Austin, Tx

In August 2007, Applied Materials installed a 24 KW solar array at its Austin campus that will generate more than 33,769 kWh (33.8 megawatt hours) annually.

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The pollution-free panels eliminate 54,390 pounds of carbon dioxide emissions, roughly the equivalent of planting eight acres and, while at the time of installation, were the largest array ever installed at an Austin business site.

Learn more about the Harris Branch solar array on Applied Materials' Austin campus and view real time data on the installation's energy generation and environmental benefits.

Solar Technology Center

Xi'an, China

In 2009 Applied Materials opened its advanced solar research and demonstration facility in Xi'an, China, the Applied Materials' Solar Technology Center. The Solar Technology Center is the largest non-government solar energy research facility in the world and is comprised of laboratory and office buildings covering more than 400,000 square feet.

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The completed facility includes a solar technology center for R&D, engineering, product demonstration, testing and training for crystalline silicon and thin film solar module manufacturing equipment and processes. The center has the largest solar array in Xi'an, a 56 kilowatt solar array on a parking lot structure. The solar array helps to reduce greenhouse gas emissions by more than 65 tons per year.

Learn more about the solar array on Applied Materials Solar Technology Center and view real time data on the installation's energy generation and environmental benefits.

Singapore Operations Center

Singapore

Designed to meet stringent environmental standards, Applied's Singapore Operations Center was recently awarded Singapore's highest environmental honor – the Green Mark Platinum award – by the Singapore Building and Construction Authority.

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The Center features the largest thin film solar system in Singapore, a 400 kilowatt peak system that annually generates 450 megawatt hours of electricity – enough energy to power more than 100 apartments for a year.

This system uses 5.7m2 PV solar panels, the most powerful in the world. Other fixtures include low-e glass curtain walls and a rainwater recycling system. These and other features are expected to result in energy savings of up to 30%.

Learn more about the Singapore Operations Center solar array and view real time data on the installation's energy generation and environmental benefits.