2007

Environmental Responsibility Report
Covering performance in fiscal years 2004–2006

Applied Materials is committed to reducing both the direct and indirect impact of our business operations and products on the environment. We've reduced our electricity consumption more than 20% over the past two years relative to the growth of our business. We're a leading purchaser of green energy and we recently announced plans to construct one of the nation's largest corporate solar installations that will generate about two megawatts on our Sunnyvale, California campus.

This is good–really good–but it's not enough.

Today, I'm establishing a new goal for the sustainable operation of our global business, and a brighter future. By 2012, Applied Materials will reduce its environmental footprint by at least 50,000 tons of carbon equivalents or approximately 20% of the Company's footprint in 2006. This is a *real* goal—a simple statement of what we want to achieve. It's a stretch goal and every one of us needs to seriously think about the way we operate at work and how we can contribute to reducing the impact of our operations on the environment. **MICHAEL R. SPLINTER** | President & Chief Executive Officer

2007

Environmental Responsibility Report
Applied Materials, Inc.

Cover: Quote from Michael R. Splinter as stated in his Earth Day Webcast to Applied Materials employees on April 20, 2007.

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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.

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 emissions 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 to sustainable development

A Sustainable Vision

Applied Materials' vision is to apply Nanomanufacturing Technology™ to improve the way people live. For nearly 40 years, Applied Materials has been working to keep Moore's Law alive: a drive that is inherently conservation-oriented. Doing more with less, and lowering costs along the way—this is a maxim that guides our own approach to sustainability. Our technology has enabled the production of energy efficient computers and flat panel displays among other products that serve people and the needs of society. And more breakthroughs are ahead as a result of new businesses Applied Materials has entered, particularly the application of our expertise to the manufacture of solar panels, low-energy glass and pollution abatement equipment. The world is starved for solutions for sustainability, and more than at any time in the Company's history, we have the technology and solutions that can contribute significantly to addressing some of the world's most pressing environmental challenges.

We are making great strides in reducing the direct and indirect environmental impacts of our business. Our current efforts include expanding our purchase of renewable energy, installing solar panels at our Silicon Valley R&D campus, offsetting the impacts of parts of our operations and driving further improvement in the energy efficiency and environmental efficiency of the products we sell. In addition to their ecological benefits, we are confident that these endeavors, and others, can also lead to commercial value and financial rewards for our business.

Applied Materials' *2007 Environmental Responsibility Report* features a number of accomplishments over the past two years, actions that speak to our core values of world class performance and mutual trust and respect for our employees and the communities in which we operate. This report reflects a record of achievement that I view as a preface to bigger things in the future, as addressed in the Company's Sustainability Policy and related Guiding Principles (see facing page).

The Sustainability Policy and Guiding Principles express Applied Materials' intention to bring consideration of sustainability into many more aspects of our business. Applied Materials has a solid history of achievement in the areas of social and environmental responsibility, and we are committed as a Company to doing much more. We are challenging ourselves to contribute more to the fight against global warming, to pollution prevention, to the awareness and engagement of our employees, and to public discussion of environmental issues. Equally as important, we have and will continue to enable our customers and business partners to do the same through collaboration, joint development and other means. I consider it one of my priorities to assure that our plans and projects in this area are fully realized.

Applied Materials aims to lead in everything we do. We recognize that climate change and other sustainability challenges are enormous global issues with many environmental risks and numerous business implications. We have an opportunity to play a leadership role for positive environmental change within the global community, and we are embracing that role.

Michael R. Splinter
President and Chief Executive Officer
Applied Materials, Inc.

EHS Leadership and Corporate Responsibility

Applied Materials' core values are reflected in its *Standards of Business Conduct* (*SBC*), a statement of policies and principles that have guided the way we conduct our business for many years. As set forth in the *SBC*, "Applied Materials is committed to protecting the environment and the safety and health of our workforce. Taking care of the environment is part of our corporate responsibility to current and future generations." A copy of the *SBC* is available on our Web site on the *Investors* page under *Corporate Governance*.[1]

Consistent with this philosophy, we are pleased to present this updated report of our environmental, health and safety (EHS) performance to our stakeholders. This report covers a number of important subjects, including new corporate policies and goals, reports on new businesses and products, and the most recent data on our performance. We are proud of the many employees and partners who contributed to the accomplishments reflected here—we sincerely thank all of them. Since our last *EHS Report* covering the period of fiscal 2002 to 2004 was released in 2005, we have continued to develop policies and plans to advance our leadership within the EHS arena. This report shows the progress we have made, and also helps us identify challenges and opportunities going forward. There is a sense of excitement at Applied Materials as we embark on many new and significant sustainability projects—we are looking forward to working with our stakeholders to identify, enhance and carry out those projects.

Since our *2005 EHS Report*, we integrated several newly acquired businesses, including Metron Technology and Applied Films, without an adverse impact to our legal and regulatory EHS compliance. This integration is an ongoing project and we expect to more fully report on these operations and their metrics in our next report.

We are excited about the future of sustainability at Applied Materials. We are building on the Company's commitment to environmental responsibility and the opportunities to integrate EHS programs into the Company's business objectives, most notably through our solar and pollution abatement products. We strengthened our commitment to running our business on renewable energy. We significantly increased the portion of energy from renewable sources that we buy from the utilities that serve our major locations. Later in 2007 we will begin installing one of the largest private sector solar arrays in the United States at our Arques Campus in Sunnyvale, California. This installation, which will produce about 1.9 megawatts upon completion, represents a long term financial investment in clean energy and demonstrates our belief that solar power is a viable option today. Our corporate mission is to help make solar power both more available and affordable through manufacturing solutions.

In terms of EHS performance, we have also made significant progress in reducing the company's energy use and carbon footprint. We take seriously our vision to provide leadership and set an example in these areas. The objectives and goals included with this report will serve as our roadmap for even greater performance. We hope and believe that our actions in this regard will inspire others to take similar aggressive steps to reduce their environmental footprint and to make progress against the threat of global climate change. We plan to educate our employees more about how they can contribute to greening our operations and we expect that to pay dividends in the form of new ideas and new energy in implementing programs. Finally, we encourage you to provide us with feedback on this report, since our principal objective is to provide useable and useful information to our stakeholders. Thank you.

Norm Armour
Vice President, Manager Corporate Asset Services

Bruce S. Klafter
Head, Corporate Responsibility & Sustainability

1 http://www.appliedmaterials.com/investors/cg_standards.html

Applied Materials EHS Reporting Principles

In our *2005 EHS Report*, we committed to several principles that would guide our performance reporting. We have reviewed these principles for the current report and have revised them below to reflect our view on effective EHS reporting.

1. Faithful Representation

The information provided shall accurately represent the performance of Applied Materials, as well as our future plans and the commercial realities of our business.

2. Commercial Focus

The information provided shall reflect our business operations and be presented in the context of our responsibility to shareholders, financial partners, customers, workers, the communities in which we operate, and the global marketplace to maintain financial strength and grow responsibly.

3. Transparency

Reported data shall be verifiable by a qualified third party through provision of sufficient information and a clear audit trail.

4. Stakeholder Perspective

The views, needs, concerns, and aspirations of our employees, customers, suppliers, and other stakeholders shall be reflected, to the extent practicable, in our reporting.

Summary of Goals and Objectives for Fiscal Year 2007 and Beyond

This report includes our first published set of EHS and sustainability goals. In future reports we will report progress against these goals and any changes, including additional or revised metrics. Some of these goals are ambitious—in particular the greenhouse gas emissions goals—but we recognize the needs in each of these areas and will exert our best efforts to achieve them consistent with the rest of our business objectives.

Area	Objective	Fiscal Year	Target/Goal
Greenhouse Gas Emissions (Carbon Equivalents) and Climate Change	Reduce the contribution to greenhouse gas emissions from Applied Materials operations	By 2012, using 2006 baseline	Applied Materials will reduce its environmental impact by at least 50,000 tons of carbon equivalents or approximately 20% of the Company's current direct and indirect emissions by 2012 50% reduction in direct emissions attributable to lab gases Obtain 15% of energy from renewable sources
Greenhouse Gas Inventory [1]			Expand inventory company-wide and complete first inventory of indirect emissions by 2008 and assess new opportunities for reductions
Energy Conservation	Achieve reductions in energy usage at Applied Materials facilities and promote efficient use of energy	2007–2012	At least a 10% reduction overall
Water Consumption	Promote water conservation in Applied Materials facilities	2007–2012	At least a 10% reduction overall
Product Energy Efficiency	Design products that improve energy efficiency and that help customers decrease energy consumption and greenhouse gas emissions	2007–2012	Achieve average 5% improvement yearly for next 5 years
Waste Management	Improve and maintain high waste recycling and reuse rates at all Applied Materials facilities	2007	Achieve diversion rate of at least 80%
Paper Usage	Promote paper use reduction in all Applied Materials facilities	2008	Achieve 50% reduction by end of FY 2008
Supplier EHS	Enhance the monitoring of social and environmental performance of Applied Materials' supplier base	2008 and beyond	Join the EICC Implementation Group and begin utilizing standardized tools Develop green procurement guidelines for direct and indirect material purchases Expand reporting on supplier performance

1 Does not include electricity usage in leased facilities and air miles traveled, which account for approximately an additional 60,000 tons CO_2 annually. Our expanded inventory will address these types of emissions and refine the estimate.

Data Summary and Analysis

Summary of Applied Materials' EHS Performance Data FY 2004–2006 [1]

Performance Metric	Comments	Trend
Global Electricity Usage	Decreased approximately 9% in absolute terms and 21% in 2006 on a normalized[2] basis	✚
Natural Gas Consumption	Decreased 44% overall and 50% on a normalized basis	✚
Greenhouse Gas Emissions (Direct and Indirect)	Fell 20% in absolute terms and 30% on a normalized basis	✚
Tons of Carbon Dioxide Equivalents Contributed by Lab Usage of Gases with Global Warming Potential	Decreased using better estimates of destruction through process and abatement; represents 1.3% of total greenhouse gas emissions	✚
Water Consumption	Increased 14%; flat on a normalized basis	■
Hazardous Waste Generation (Liquid and Solid)	Decreased 90% due to new means of treating dilute copper waste	✚
Diversion Rate for Non-Hazardous Waste	Increased from 59% in 2004 to 75% in 2006	✚
Volatile Organic Compound (VOC) Emissions	Decreased 41% over past three years	✚
Regulatory Notices of Violation	One minor violation during the three year period	✚
Illness and Injury Incidence Rates	Case rates remained flat over three year period, at or below relevant benchmarks	■
EHS Training Penetration	At or near 95% target each of the three years	✚

Key
✚ Improvement
■ No significant improvement

1 Applied Materials' fiscal year runs from November 1 to October 31, and periods represented are November 1, 2003 to October 31, 2006, except that regulatory Notice of Violations (NOVs) and illness and injury incidence rates are tracked on a calendar year rather than fiscal year basis.

2 **Normalization** refers to a ratio of the data and the revenue for the stated period in time (e.g., electricity consumed in 2006/2006 revenue). Revenues (in billions) for the report period were as follows: 2004– $8.013; 2005– $6.992; and 2006– $9.167.

EHS Performance Data Metrics Table[3]

		Energy Consumption		Greenhouse Gas Emissions tCO_2eq [4]			
Site		**Electricity** (kWh)	**Natural Gas** (therms)	**Electricity**	**Natural Gas**	**Semiconductor Gases**	**Total Emissions** By site
Bay Area, California[5]	**2006**	144,853,123	2,079,340	40,164	12,289	1,782	54,235
	2005	133,067,607	2,101,703	36,896	12,421	2,656	51,974
	2004	161,252,627	3,990,533	45,378	23,584	4,699	73,661
Austin, Texas	**2006**	86,666,297	428,437	57,579	2,532	0	60,111
	2005	93,166,674	496,856	61,897	2,936	0	64,834
	2004	101,692,930	615,974	68,374	3,640	0	72,015
Horsham, United Kingdom	**2006**	10,265,180	50,241	4,080	297	0	4,377
	2005	9,434,108	46,412	4,057	274	0	4,331
	2004	9,204,332	71,778	3,958	424	0	4,382
Rehovot, Israel	**2006**	22,869,130	0	18,224	0	0	18,224
	2005	22,138,000	0	18,109	0	0	18,109
	2004	20,377,000	0	16,322	0	0	16,322
Total	**2006**	264,653,730	2,558,018	120,047	15,118	1,782	136,947
	2005	257,806,389	2,644,971	120,959	15,632	2,656	139,247
	2004	292,526,889	4,678,285	134,032	27,649	4,699	166,380

3 Totals have been rounded to the nearest whole number

4 Metric Tons of Carbon Dioxide Equivalents (tCO_2eq)

5 Includes Santa Clara, Sunnyvale and AKT locations

6 CCF = 100 cubic feet (748 gallons or 2,832 liters)

7 Total Case Incidence Rate, representing the average number of work-related injuries incurred by 100 workers during a one-year period.

Detailed EHS Performance Data

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We analyzed data from fiscal 2004 through 2006 for this report. During the past two years, Applied Materials made significant reductions across many different tracked categories.

Since our last reporting period of fiscal 2002 to 2004, as a company our electricity usage decreased approximately 9% in absolute terms and 21% on a normalized basis with all of the gains in energy efficiency coming in Austin (TX) and Santa Clara (CA). Natural gas usage decreased significantly (44% overall) led by our Austin, Santa Clara and Horsham (UK) facilities.

Some of the gains in energy efficiency (or reductions in energy consumption) were attributable to a consolidation of operations in the Bay Area and Austin, where buildings and campuses were closed. While real estate shrunk measurably in those locations, the employee population was roughly flat over this period and revenues increased by 14.4%. Given those facts, the reductions in energy consumption we achieved represent real gains in efficiency.

Water usage increased (14% overall, flat when normalized) due to the introduction of Chemical Mechanical Polishing (CMP) operations in Austin, a water-intensive set of operations. We are evaluating ways to minimize water use as a result of this trend (e.g., we are studying harvesting rainwater for irrigation).

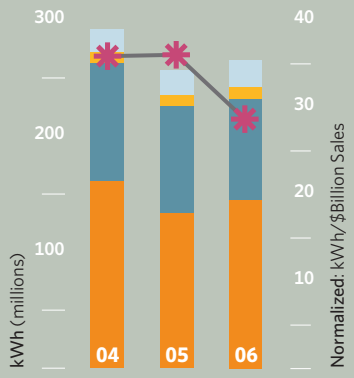
Greenhouse gas (GHG) emissions, measured in tons of carbon dioxide equivalents, fell 20% in absolute terms and 30% when normalized by revenue. The majority of this reduction was a direct result of the decrease in consumption of electricity and natural gas.

Carbon equivalent emissions from semiconductor gases (accounting for only 1.3% of total carbon equivalent emissions) also

→ Summary continued on page **12**

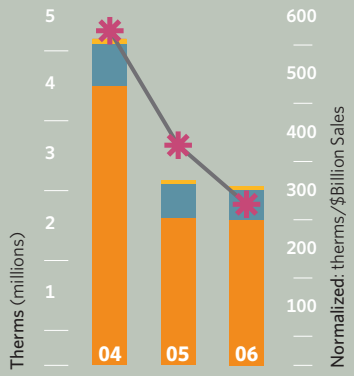
		Hazardous Waste kg			Other Waste					
Site		**Liquid**	**Solid**	**Total**	**Recycled**	**Non-Hazardous**	**Water Usage** CCF[6]	**Air Emissions (VOC)** kg	**Diversion Rate**	**TCIR**[7]
Bay Area, California	**2006**	2,099,119	71,663	2,170,782	2,054	1,236	364,546	4,687	62.44%	1.68
	2005	3,438,323	158,794	3,597,117	1,997	1,228	415,949	3,519	61.93%	1.61
	2004	20,231,129	283,322	20,514,451	1,934	3,045	403,368	3,218	38.84%	1.87
Austin, Texas	**2006**	3,356	11,574	14,930	4,730	602	214,171	6,523	88.71%	1.14
	2005	2,846	5,741	8,587	3,141	490	134,201	6,530	86.52%	1.22
	2004	4,852	3,018	7,870	4,004	817	107,615	16,000	83.05%	1.93
Horsham, United Kingdom	**2006**	164	3,641	3,805	23	103	851	0	18.25%	0.00
	2005	113	2,807	2,920	9	112	701	0	7.44%	0.77
	2004	191	1,615	1,806	8	136	785	120	5.56%	0.00
Rehovot, Israel	**2006**	48	1,250	1,298	136	392	17,494	682	25.76%	0.37
	2005	0	1,200	1,200	84	343	15,180	360	19.67%	0.31
	2004	49	40	89	58	246	13,545	764	19.08%	n/a
Total	**2006**	2,102,687	88,128	2,190,815	6,943	2,333	597,062	11,892	74.85%	
	2005	3,441,282	168,542	3,609,824	5,231	2,172	566,031	10,409	70.66%	
	2004	20,236,221	287,995	20,524,216	6,004	4,244	525,313	20,102	47.37%	

Electricity Consumption by Location, FY 2004–2006



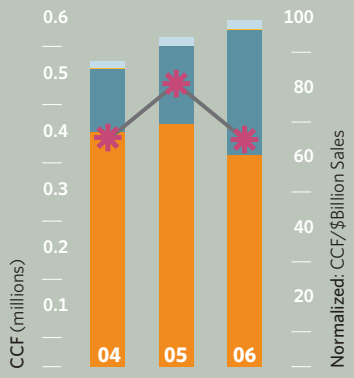
	Unit	2004	2005	2006	% change
Bay Area, CA[1]	kWh	161,252,627	133,067,607	144,853,123	–10.2%
Austin, TX	kWh	101,692,930	93,166,674	86,666,297	–14.8%
Horsham, UK	kWh	9,204,332	9,434,108	10,265,180	11.5%
Rehovot, Israel	kWh	20,377,000	22,138,000	22,869,130	12.2%
Total	kWh	292,526,889	257,806,389	264,653,730	–9.5%
Normalized	kWh/$Bil. Sales	36,506,538	36,871,623	28,870,266	–20.9%

Natural Gas Consumption by Location, FY 2004–2006



	Unit	2004	2005	2006	% change
Bay Area, CA[1]	therms	3,990,533	2,101,703	2,079,340	–47.9%
Austin, TX	therms	615,974	496,856	428,437	–30.4%
Horsham, UK	therms	71,778	46,412	50,241	–30.0%
Rehovot, Israel	therms	0	0	0	0.0%
Total	therms	4,678,285	2,644,971	2,558,018	–45.3%
Normalized	therms/$Bil. Sales	583,837	378,285	279,046	–52.2%

Water Consumption by Location, FY 2004–2006



	Unit	2004	2005	2006	% change
Bay Area, CA[1]	CCF	403,368	415,949	364,546	–10%
Austin, TX	CCF	107,615	134,201	214,171	99%
Horsham, UK	CCF	785	701	851	8%
Rehovot, Israel	CCF	13,545	15,180	17,494	29%
Total	CCF	525,313	566,031	597,062	14%
Normalized	CCF/$Bil. Sales	65,558	80,954	65,132	–1%

Key: Bay Area, CA; Austin, TX; Horsham, UK; Rehovot, Israel; Normalized

1 Includes Santa Clara, Sunnyvale and AKT locations

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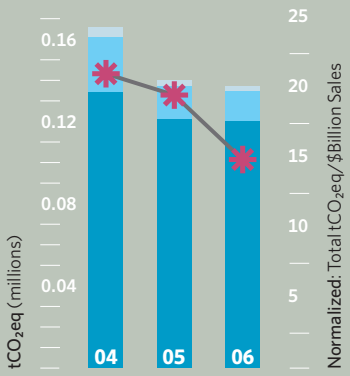
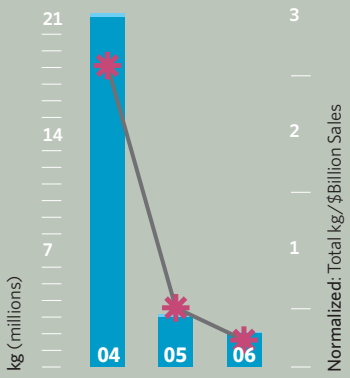
Greenhouse Gas Emissions by Source, FY 2004–2006



	Unit	2004	2005	2006	% change
Electricity	tCO_2eq	134,032	120,959	120,047	–10.4%
Natural Gas	tCO_2eq	27,649	15,632	15,118	–45.3%
Semiconductor Gases	tCO_2eq	4,699	2,656	1,782	–62.1%
Total	tCO_2eq	166,380	139,247	136,947	–17.7%
Normalized	Total tCO_2eq/$Bil. Sales	20,764	19,915	14,939	–28.1%

Hazardous Waste, FY 2004–2006



	Unit	2004	2005	2006	% change
Liquid Hazardous Waste	kg	20,533,726	3,441,282	2,102,687	–89.8%
Solid Hazardous Waste	kg	287,995	168,542	88,128	–69.4%
Total Hazardous Waste	kg	20,821,721	3,609,824	2,190,815	–89.5%
Normalized	Total kg/$Bil. Sales	2,598,493	516,279	238,989	–90.8%

Data Summary and Analysis

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decreased significantly (62% overall) due to improved tracking methods using the updated Intergovernmental Panel on Climate Change (IPCC) protocol and increased use of EcoSys™ abatement equipment. Greenhouse gas emissions of semiconductor gases were estimated using the Tier 2a methodology of the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, Chapter 6 (Electronics Industry Emissions). Default emissions factors in Table 6.3 of the *2006 IPCC Guidelines* were used along with default abatement efficiencies in Table 6.6, where applicable.

Hazardous waste decreased 90% in absolute terms. The largest component of this reduction stemmed from installation of the Applied Materials EcoSys Aquareus™ copper removal system (see p. 24). Hazardous waste volumes also went down following our evaluation of waste piping and ductwork generated from construction projects, some of which was only minimally contaminated, but was classified as hazardous. Better testing of the material and decontamination allowed processing at Class II or III landfills rather than Class I hazardous waste landfills. Also, beginning in 2006, Austin Manufacturing began collecting isopropanol wipes as hazardous waste as a result of a regulatory interpretation change. This change resulted in an increase in waste for the Austin Solid Hazardous Waste category.

Volatile organic compounds (primarily isopropanol) emissions decreased 41% in absolute terms over the two year period. We achieved much of the reduction by using a lower concentration of isopropanol and premoistened wipes, which also eased our compliance burden associated with the permitting of wipe-cleaning activities.

Of special note, although remaining basically flat over the last three years, illness and injury incidence rates remain at or below benchmark levels and only one Notice of Violation (NOV) was issued over the period for all our locations. The NOV was considered minor in nature and involved a single discharge that exceeded the limit for nickel at a Metron Technology, Inc. facility in Fremont, California. The Company paid a $1,400 fine and replaced the pumps that degraded and caused the excess level.

Climate Change

Applied Materials recognizes that climate change is an urgent problem requiring local, regional and international action to reduce GHG emissions. Energy consumption and efficiency are key elements of strategies to reduce GHG emissions and, as described in this report, we believe Applied Materials has a positive role to play in providing solutions. Our progress over the past three years in reducing our own carbon dioxide footprint is described throughout this report. We are now ready to drive further reductions by adopting a broader corporate goal and by developing a more comprehensive strategy around that goal.

Area	Objective	Fiscal Year	Target/Goal
Greenhouse Gas Emissions (Carbon Equivalents) and Climate Change	Reduce the contribution to greenhouse gas emissions from Applied Materials operations	By 2012, using 2006 baseline	Applied Materials will reduce its environmental impact by at least 50,000 tons of carbon equivalents or approximately 20% of the Company's current direct and indirect emissions by 2012 50% reduction in direct emissions attributable to lab gases Obtain 15% of energy from renewable sources
Greenhouse Gas Inventory [1]			Expand inventory company-wide and complete first inventory of indirect emissions by 2008 and assess new opportunities for reductions

Our climate change strategy elements include:

- Improving energy conservation within our operations
- Enhancing our product offerings to enable customers to reduce their emissions
- Purchasing renewable energy and developing self-generation capacity (e.g., announced solar installation in Santa Clara)
- Educating and empowering employees and business partners to make contributions to this strategy
- Advocating for local, national and international policies that promote sound energy use and help reduce GHGs

1 Does not include electricity usage in leased facilities and air miles traveled, which account for approximately an additional 60,000 tons CO_2 annually. Our expanded inventory will address these types of emissions and refine the estimate.

Climate Change

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The Carbon Disclosure Project (CDP) provides an information clearing house for the world's largest institutional investors on the business implications of climate change. Applied Materials has responded to each of the first four questionnaires from the CDP.[1] We have not identified any existing or proposed regulations of GHG emissions that are anticipated to have a material financial or strategic impact on our operations. This conclusion is based in part upon the intensity of current operations. To the extent future GHG emissions regulation affects the utilities that serve Applied Materials, there may be some impacts on operations (e.g., higher prices for energy). Since responding to CDP4, the fourth questionnaire of the CDP, Applied Materials' CEO has chaired an internal sustainability and climate change executive steering committee and we expect that kind of visibility for sustainability and climate change issues to continue. In addition, a report of the Company's sustainability efforts will be provided regularly to the Strategy Committee of Applied Materials' Board of Directors.

We are also testing our ability to influence employee behaviors that generate GHG emissions, primarily commuting habits. Applied Materials is already recognized by the U.S. Environmental Protection Agency and U.S. Department of Transportation as one of the Best Workplaces for Commuters; we ranked #10 among *Fortune* 500 companies based on a wide variety of programs available to 63% of our regular workforce (e.g., transit subsidies, ride-matching, showers and lockers, etc.). Over an eight month period in 2007, we will "compete" in the Cool Commutes challenge of the Silicon Valley Leadership Group and attempt to increase our employees' actual usage of all of those alternative commute programs.[2] We hope to be able to report success in taking additional cars off the road in the Silicon Valley, improving the quality of life for our employees and our neighbors.

In terms of external activity, Applied Materials is a pledging member of Sustainable Silicon Valley (SSV), a collaboration of businesses, government agencies and non-governmental organizations that are identifying and addressing environmental and resource pressures in Silicon Valley. As its first initiative, SSV is working towards a goal of reducing regional carbon dioxide (CO_2) emissions 20% below 1990 levels by 2010. Members and others share best practices on a regular basis regarding energy efficiency and other strategies to reduce CO_2 emissions. Applied Materials is an active member of TechNet, the Technology CEO Council, the American Electronics Association, the Information Technology Industry Council and other associations that advocate for effective policies to address climate change.[3] We are evaluating other coalitions through which we might contribute to advancing public discussion of this critical issue.

Applied is an active participant in numerous partnerships focused upon sharing best practices and collective action to combat global warming. Our plans are to increase that activity particularly with organizations working on energy conservation strategies and promoting development of photovoltaic solar and other renewable energy sources.

1 Responses may be viewed at: http://www.cdproject.net/response_list.asp?id=5&letter=A

2 See http://www.svlg.net/campaigns/coolcommutes/

3 See *TechNet*'s Green Technologies Task Force recommendations: http://www.technet.org/issues/greentech/

Highlights of Our Performance

Design for Environment and Sustainable Products

Product Energy Efficiency

Applied Materials' commitment to Design for Environment is to design our equipment and service products to reduce consumption of natural resources, energy requirements, and waste and emissions, while maximizing their overall functionality. Many customers are environmental leaders and have declared their intention both to reduce energy consumption in their factories and to achieve corresponding reductions in GHG emissions. One study estimated that the global semiconductor industry could save nearly $500 million per year in energy costs—or enough electricity to power a small city—by making modest improvements to its tools and facility support systems.[1] Our stated goal is to help customers do just that, achieving improvement in energy efficiency in new products of at least 5% on average for the next several years.

Since our *2005 EHS Report*, we have refined our product life cycle thinking in several respects. We developed, piloted and facilitated the incorporation into industry standards of methods for measuring energy consumption, including electricity and utilities. In addition, we amended the internal business process used for developing and releasing new products into the marketplace—known as the Product Life Cycle (PLC) process—to require consideration of energy efficient components and to incorporate a target for improved efficiency. The EHS organization is also working with Applied Global Services (AGS), which is the Applied Materials group that sells pumps, chillers and abatement equipment, and with our materials organization to identify commercially available, energy efficient components that can be incorporated into tool designs. These efforts are maturing and are starting to generate data and results that are encouraging, as described below.

1 Baseline characterization

Product characterization using Semiconductor Equipment and Materials International (SEMI) Standard s23-0705 "Guide for Conservation of Energy, Utilities, and Materials Used by Semiconductor Manufacturing Equipment" allows

SEMI S23 Annual Energy Consumption for a Theoretical Cluster Tool

	Idle		Processing		Total		Per Wafer		mWh/cm²
	Total m³	Equiv. kWh	Total m³	Equiv. kWh	Total m³	Equiv. kWh	Total m³	Equiv. Wh	Equiv. mWh
Electricity		50,958		164,484		215,441		206.77	292.51
HVAC Heat Burden		13,370		40,678		54,048		51.14	72.34
Ultrapure Water (UPW, DI)	0	0	0	0	0	0	0.00E+00	0.00	0.00
Process Cooling Water (PCW) <25°C	4,179	7,438	11,700	20,826	15,878	28,264	1.47E−02	0.03	0.04
Process Cooling Water (PCW) >25°C	0	0	0	0	0	0	0.00E+00	0.00	0.00
Nitrogen (Utilities N_2)	19,263	4,816	59,456	14,864	78,719	19,680	7.47E−02	18.69	26.43
Clean Dry Air (CDA)	131	19	8,721	1,282	8,852	1,301	1.10E−02	1.61	2.28
Exhaust	494,871	1,979	1,385,638	5,543	1,880,509	7,522	1.74E+00	6.97	9.86
House Vacuum	0	0	0	0	0	0	0.00E+00	0.00	0.00
Total		**78,580**		**247,676**		**326,256**		**285.19**	**403.46**

1 International SEMATECH Manufacturing Initiative
http://ismi.sematech.org/corporate/news/releases/20051222a.htm

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us to compare energy use and savings on new products. An example of the data collected and what the output of such a characterization effort would be is shown in the table on p. 15. The data shows the environmental impact of a theoretical cluster tool (i.e., a mainframe plus several process chambers) in terms of resources consumed; water, nitrogen and clean dry air are all normalized in terms of kWh equivalent.

This type of characterization provides design engineers with an indication of where energy is being consumed on a product and thus an indication of where opportunities exist for improvement. The data provide design engineers with ideas for possible experiments that might reveal specification changes that can be made, which may be transparent to the process. In the example above, nitrogen use is a significant part of the tool's overall energy consumption. If a design engineer wished to explore adding an idle mode to the system to reduce pump ballast flow levels when not processing wafers, an experiment could be run to determine if such a change would impact the process performance.

Screenshot of an Energy Reduction Worksheet

2 New product development

During an early phase of the PLC, market requirements for a product are defined. This includes determination of the energy consumption goal for the tool being modified. The starting point is looking at the energy consumed by the baseline or legacy products. Modified areas would be examined in terms of impact to overall energy consumption. As part of this process, the design team also examines areas of the product design where enhancements can often be made. The design team uses a checklist of opportunities to assist them in this process. The screenshot on the left shows an extract from this checklist.

Once they identify areas for improvement, the design team estimates the energy consumption for the product using the table on p. 15. As part of the baseline process, they establish an energy reduction goal and test product performance against the goal.

One example of a product that recently went through this program is the 300mm Producer® GT™. Data collected during the validation phase found a 37% reduction in the energy consumption of the 300mm Producer GT as compared to an earlier version of the system. This improvement represents more than four million kWh of yearly electricity savings in a typical fab where multiple Producer tools are installed.

3 Key component improvements

Another part of our program involves working with key suppliers such as those providing pump, chiller and heat exchangers. These items are commonly used across multiple product types. Enhancements made to these key modules will result in benefits to most Applied Materials products. (*See Metron discussion on p. 20 for more information.*)

We work with suppliers to obtain data on energy consumption for their products so that we may identify models with low energy consumption profiles.

4 Industry outreach

Applied Materials works closely with customers and industry associations such as SEMATECH and Japan Electronics and Information

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Technology Industries Association to establish guidelines and methodologies for improving tool designs from an energy viewpoint. Applied Materials was an active participant in developing a SEMI S23 application guide.[1] Applied Materials also serves as a co-chair on the SEMI S23 standards committee. We are proud to have been recognized by ISMI in 2005 with its first Supplier Environmental Leadership Award for "sustained commitment to resource conservation for semiconduct or manufacturing equipment."

5 Employee training

Applied Materials has a training program for design, process, and software engineers covering requirements for designing a semiconductor process tool from an environmental, health and safety viewpoint. The course introduces the guidelines of SEMI S23, identifies why energy reduction is important to Applied Materials and its customers, and provides examples of ways to approach improving overall tool energy efficiency as part of the design process. Engineers are required to take this course or a recertification every two years so the latest thinking and continuously improved tool design for energy efficiency is captured in system designs.

Data collected during the validation phase of the PLC program found a 37% reduction in the energy consumption of the 300mm Producer GT as compared to an earlier version of the system.

1 See http:// ismi.sematech.org/docubase/abstracts/4783aeng.htm

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Solar Power: Changing the Cost Equation

Solar power generation is a great opportunity for the world to access clean, renewable energy. Globally, we are facing an increasingly carbon-constrained economy. Regulatory drivers such as California's 2006 Global Warming Solutions Act which mandates a 25% cut in emissions below current levels of GHG by 2020, as well as global initiatives such as the Kyoto Protocol and numerous multinational emissions trading schemes, reflect a growing consensus that we must reduce GHG emissions.

Solar panel producers, however, face the challenge of reducing the overall cost per watt so the price of solar-generated electricity is competitive with conventionally-generated peak power rates and, eventually, in parity with conventional peak power rates. To help solar cell makers address this challenge, Applied Materials is using its expertise gained in the semiconductor and flat panel display industries, as well as the knowledge, technology and expertise obtained as a result of the July 2006 acquisition of Applied Films.

While cost-per-transistor drives the semiconductor industry, the key metric that drives the solar industry is cost-per-watt. To reduce the cost-per-watt, solar cell makers need to increase cell conversion efficiency and reduce the area-related manufacturing costs of the solar cell—or both. In just the past few years, solar panel production factories have become large enough to benefit from the scale of manufacturing and technology optimization that is supplied by companies like Applied Materials. The goal is to reduce the cost of solar cell production and the cost of solar energy.

Even when emissions related to solar cell manufacturing are counted, photovoltaic generation produces less than 5% of the carbon dioxide emissions of a conventional coal-fired electricity generation plant (18–32 grams CO_2 equivalent/kWh vs. 900 grams CO_2 equivalent/kWh for a coal plant)[1]. Using solar energy to replace the use of traditional fossil fuel energy sources can prevent the release of GHG pollutants into the atmosphere.

Charlie Gay, Vice President, General Manager, Solar Business Group; and Bruce Klafter, Head, Corporate Responsibility & Sustainability, next to the existing solar installation above Applied's Maydan Technology Center. This facility will be expanded to a capacity of about two megawatts over the next year.

1 Photovoltaics Energy Payback Times, Greenhouse Gas Emissions and External Costs: 2004 – early 2005 Status, Wiley & Sons, 2006; Energy Use and Greenhouse Gas Emissions in the Life Cycle of Thin Film CdTe Photovoltaics, V.M. Fthenakis and H. Kim, NPERC, Brookhaven National Laboratory

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Glass Coatings

Building energy use in the United States accounts for 68% of all domestic electricity. Direct energy purchases for household and vehicle use (i.e., electricity and gasoline) constitute approximately one-third of the energy demand in the U.S. Our Glass Coating Products Group aims to make a dent in those demands, window by window.

We design and manufacture equipment which coats architectural glass (the kind seen commonly in homes, offices, as well as commercial and industrial buildings) with "low emittance" (low-e) materials. Low-e materials are high quality metal/oxide films on glass that reduce the flow of heat into and out of buildings. Low-e glass improves efficiency of buildings' heating and cooling while still allowing light to pass through the windows (solar gain).

Applied Materials low-e glass coating equipment has contributed to reducing the cost of energy efficient glass ten-fold over the last decade.

Low-e glass coating equipment, manufactured in North America and Europe by Applied Films and now Applied Materials, has contributed to reducing the cost of energy efficient glass ten-fold over the last decade, bringing new building technology to many consumers for whom costs have previously been prohibitive. These high quality films on architectural glass have facilitated energy efficiency improvements in buildings worldwide.

Our installed base of this equipment in glass manufacturing plants has enabled the application of energy efficient films on more than 20 billion square feet of architectural glass. The savings in energy enabled by these films and equipment are roughly equivalent to the oil contained in 57 large oil tankers. Stated another way, the total energy saved through the installation of windows coated using Applied Materials' technology equates to the amount of energy it would take to heat about 30,000 homes for one year.

In developing economies, such as China and India, our equipment was the first of its kind installed in architectural glass factories that are making the low-e glass used in buildings and in areas where extreme temperatures are common.

In addition to providing technologically advanced solutions for lowering energy demands in buildings, our glass/web products increase energy efficiency in hundreds of thousands of automobiles. Known in the automotive world as Solar Infrared Reflective glazing (SIRR), coated automotive glass reflects over 60% of the sun's thermal heating potential from the car interior. This improves fuel consumption and comfort, by reducing the need for air conditioning without reducing visible light.

A recent test in the Arizona desert found the interior of a car with SIRR glass to be 5° F cooler, and the dashboard 14° F cooler, than a control vehicle fitted with tinted glass. This translates into an approximately 7.5% savings in vehicle tailpipe emissions and a fuel savings of 0.6 miles per gallon through reduced air conditioning usage.

Our aim is to improve market access to SIRR glass for automobiles and low-e glass for buildings. As energy conservation becomes more important to society and as energy consumption becomes increasingly regulated, our technology will enable integration of these important technologies in buildings and cars.

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Metron Solutions to Reduce Customers' Environmental Footprint

Through abatement equipment manufactured and sold by our wholly-owned subsidiary, Metron, we are helping the semiconductor industry meet its goal of reducing GHG emissions. One primary objective is enabling the reduction of emissions of perfluorocarbons (PFC), a class of compounds known for their high Global Warming Potential (GWP) and long atmospheric lifetime. GWP takes into account a molecule's lifetime and its ability to absorb infrared radiation (IR [heat]); the greater the GWP, the greater the contribution to global warming.

Reductions in PFC emissions can be made through process optimization and the use of alternative chemistries and abatement technology. With the 2004 acquisition of an abatement systems business, Applied Materials began offering a comprehensive suite of products and services that enable semiconductor device manufacturers to meet their environmental goals. The products include the EcoSys line of "point of use abatement systems" (i.e., each system is mated with one or more pieces of fabrication equipment). The EcoSys systems that abate PFC have destruction rate efficiencies that have measured as high as 99%.[1]

Advantages of Integrated Sub-Fab Components

Left: Yesterday— Sub-fab components interact with tool independent of one another via interlocks
Right: Future— Fully-integrated sub-fab components interact with tool via software interface

PFCs are chemically very stable and long-lived in the atmosphere. Relative to carbon dioxide they have a much greater potential to absorb IR radiation. For instance, emitting one kilogram of the PFC sulfur hexafluoride (SF_6) is like emitting six tons of carbon equivalent (for a 100-year time horizon). Some of these compounds have an atmospheric lifespan of centuries, even millennia; therefore, it is important to control these emissions.

Reducing fab power consumption is another critical issue for customers. Aside from the PFC reductions mentioned above, the redesign of our equipment has yielded many other benefits, including reduced electrical and resource consumption. Metron introduced a unique Idle-Mode™ software that enables process tools such as etch or chemical vapor deposition (CVD) systems to instruct the Marathon™ abatement system to return to "idle" setting, dramatically conserving electric power. Use of Idle-Mode technology in the Applied Materials Maydan Technology Center

1 See http://www.metrontech.com/equipment_solutions/ecosys.html

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has demonstrated savings of up to 17% on chilled water costs alone; chilled water systems can consume over 20% of a production fab's energy.

Metron is working to extend this type of solution to other utilities in the fab, enabling more efficient communication with tools and achieving real-time process control. For example, the chillers, heat exchanger and pumps might be put in idle mode when no wafers are present in the chambers. We have also demonstrated in our applications laboratory that abatement systems can be controlled in real-time to adapt to the specific recipes being run on each individual chamber. The ability to adjust the fuel, water, air, nitrogen and electrical consumption of the sub-fab components and to adapt their operating mode to the process tool recipe will lower the cost of ownership and reduce resource consumption.

Metron also offers a line of vacuum pumps developed in collaboration with Toyota Industries that are designed to radically reduce power consumption when used in conjunction with Applied Materials fabrication equipment. Conventional pumps are a significant energy drain in fabs, consuming nearly one-third of the electric power used during production. As the global semiconductor industry distributor for ultra-high efficiency Toyota pumps, which use less than half the power of competing products, Metron is helping customers overcome challenging electric power resource issues.

- **Energy Saving Pumps**
  2–3.8x energy savings with next generation pumps—lower cost, reduced size and noise
- **Energy Saving Heat Exchangers**
  37% reduction in power consumption with next generation heat exchangers
- **Energy Saving Thermo-module Chillers**
  Enables up to 75% reduction in electrical consumption along with better temperature stability, faster response time and a more compact size

Marathon is an abatement system manufactured and sold by Applied Materials' wholly-owned subsidiary, Metron. Through abatement equipment from Metron, we are helping the semiconductor industry meet its goal of reducing GHG emissions.

Environmental Management Systems

Our strategy regarding Environmental Management Systems (EMS) has two components: concentrate on those operations and facilities where ISO registration would be most valuable and develop an EMS that is performance-oriented rather than one that emphasizes documentation alone. We have implemented that strategy by initially registering all of our manufacturing operations, including Austin and the Process Diagnostic Control group in Israel. (We were in the process of registering our Implant equipment manufacturing in Horsham, UK, but that activity was stopped following the announced intent to close the Horsham facility in late 2007.)

EMS Key Process Indicators (KPI) Information with FY 2007 Assumptions

		FY 06 Actual	FY 07 Goal
Austin, TX	Energy Use Reduction	1.50%	0.50%
	Water Use Reduction	n/a	10%
	Recycling Diversion Rate	88%	89%
	Air Quality-Commuter Emission Reduction	21%	30%
Israel	Product Design Training	65%	95%
	Energy Savings (kWh/sf)	9.4	9.4
	Training System Management	95%	95%
	Campus Solid Waste	30%	35%
	Chemical Management	95%	95%
China	Reduce Total Electrical Usage	n/a	1%
	Returned Parts Decon	n/a	100%
	Hazardous Materials Transportation	n/a	100%
	Computer/Electronics Recovery	n/a	100%
	Hazardous Materials/Waste Vendor Audits	n/a	100%

Santa Clara's EHS group (covering all of our Bay Area operations) is refining the EMS that covers the Corporate Asset Services (CAS) organization. The CAS organization includes the Application Labs group, the Facilities group, Real Estate and EHS. Consequently, this EMS will cover a wide variety of activities that have significant environmental aspects and impacts (e.g., operations and maintenance of treatment systems, hazardous waste collection and disposal, heating and lighting, etc.). The refinement of our management systems should allow us to pinpoint ways to make our operations more efficient. At the conclusion of this 2007 project, consideration will be given to registering the EMS or making a self-declaration to ISO 14001 after an internal audit (as permitted by the Standard).

Applied Materials' current registrations to ISO 14001 can be viewed on our Web site.[1]

This report announces our set of sustainability goals (see p. 4) that will be incorporated into regional programs in order to drive consistency and improve performance. The 2007 goals set by our groups in Austin, Israel and China are reflected in the table to the left.

In terms of safety management, the Company's Volume Manufacturing Operations in Austin, Texas continues to maintain its status as a Voluntary Protection Program (VPP) with the U.S. Occupational Safety and Health Administration (OSHA). Following some investigation and analysis, we determined that Austin's VPP status made registration to the Occupational Health and Safety Assessment Series 18001 unnecessary. Both Israel and Applied Materials China, however, are pursuing 18001 registrations in 2007.

In terms of safety management, Applied Materials' Volume Manufacturing Operations in Austin continues to maintain its status as a Voluntary Protection Program with OSHA.

1 http://www.appliedmaterials.com/about/iso14001_certstatus.html?menuID=6_4

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Environmental Success Stories

The following are some notable examples of how we have used a management systems approach to identify projects or programs that generate both environmental benefits and value to the business.

1 Green Power Use

In addition to using energy efficient products and business practices, using clean energy is an important way to reduce our global carbon footprint. This strategy and the U.S. Environmental Protection Agency's *Fortune* 500 Green Power Challenge were the catalysts for our increasing purchases of green power during the past two years.

Our Santa Clara facilities are setting the pace for green power usage in Silicon Valley. We began in 2006 by purchasing slightly over 2.2 million kilowatt hours (kWh) through Silicon Valley Power's (SVP) Green Power initiative (Silicon Valley Power is Santa Clara's municipally-owned utility). That purchase alone made us the largest participant in SVP's green power program. In 2007 we expanded our agreement and committed to buy 8.22 million kWh of clean renewable energy annually. Our Santa Clara clean energy purchases continue to be SVP's largest green power commitment by any customer to date. The 8.22 million kWh commitment is approximately 12% of the energy used at our Santa Clara facilities, and is expected to cut greenhouse gas emissions by an estimated 5%.

The Company also subscribed to Austin Energy's GreenChoice program in 2006. The Austin campus' annual green power purchases total 11.2 million kWh, representing nearly 13% of Austin's annual electricity usage. We have committed to purchasing this amount for each of the next ten years. According to Austin Energy, our investment in wind power will prevent emissions of more than 23 tons of sulfur dioxide, 7.5 million tons of nitrogen oxides, two tons of carbon monoxide and one ton of particulates, as well as substantial amounts of mercury, cadmium and lead.

Applied Materials' green power usage will prevent the emission of approximately 12,100 metric tons of CO_2 annually and is equivalent to taking 2,620 cars off the road for a year, 10,000 acres of pine forest storing carbon for a year or 28,140 gallons of gasoline. As reflected in our corporate principles and goals, we intend to increase reliance on renewable energy wherever practicable.

This is a mock-up of the proposed solar installation for our Austin campus.

Programs such as the U.S. Environmental Protection Agency's *Fortune* 500 Green Power Challenge and Silicon Valley Power's Green Power initiative have been the catalysts for our increasing clean energy purchases during the past two years.

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2 Metal Recycling

Two programs, a metal recovery and recycling program and a hazardous waste elimination program, were recently implemented to further reduce the amount of hazardous waste generated by construction projects and other operations.

The first involves recovering and recycling metals waste from lab closures and modifications, tool demolition and tool relocation. In the past, we conservatively treated much of the facilities piping and ductwork surrounding or supporting our equipment as hazardous, either because of its contact with or proximity to the tool. By more carefully managing and evaluating this infrastructure, we determined that decontamination of many of these structures was possible, practical and a more responsible solution. Both in terms of cost and environmental impact, recovery and recycling are better solutions than demolition and disposal. Since the program's implementation in 2005, we have safely recovered over eight tons of metal and saved tens of thousands of dollars.

The hazardous waste elimination program has reduced the number of plastic and glass containers being sent to hazardous waste disposal. To date we have recovered over 8,000 containers and anticipate recovery of thousands more. We also safely rinse and reuse plastic 55-gallon drums. These drums are used to transport liquid wastes that are too low in volume to warrant treatment facilities at the point of generation. Instead, the drums are transported to a more central location for treatment, increasing efficiency and improving environmental protection.

3 Innovative Copper Treatment

Copper is an increasingly important processing material in the semiconductor industry due to its ability to increase circuit speeds through its unique conductive properties. Unfortunately, copper is also a known source of aquatic toxicity. We have made it our business to ensure that this material is managed appropriately, and we developed technologies to carefully control copper before it becomes part of the process waste stream.

By introducing the point-of-use Aquareus copper waste water treatment system, we are helping chipmakers address the environmental risks posed by copper. Following two years of intensive testing of Chemical Mechanical Planarization (CMP) slurry in the Applied Materials labs, we have demonstrated the ability of Aquareus to cost-effectively reduce copper in wastewater to levels far below the most rigorous governmental standards.

Aquareus utilizes a highly selective, fluidized bed ion exchange resin technology able to handle high flows from a broad range of CMP chemical slurries. Aquareus can remove 99% of dissolved copper from slurry wastewater. We installed four of the Aquareus units, and combined, these units have already removed 30 pounds of copper from waste streams.

In addition, we eliminated the need for much of our off-site transportation and treatment at hazardous waste facilities of approximately 4.5 million gallons of waste copper slurry. By treating copper CMP wastewater on-site, we have eliminated 900 tanker trips totaling over 45,000 miles. You can see the results in our waste disposal data where we show a 90% decrease in off-site disposal since 2004. Cost savings to date have been more than $700,000.

Nanotechnology Safety and Health

Nanotechnology has been called the next revolution that will change the way we work, live and communicate. Broadly described as the creation, manipulation, control and application of materials at the nanoscale (i.e., structures less than 100 nanometers in size), nanotechnology involves the ability to engineer and exploit the unique chemical, physical, and electrical properties that emerge from ultra-small scale man-made particles.

As the semiconductor, flat panel and solar industries are examining potential uses of nanotechnology in manufacturing, concerns for the protection of employees and the environment are paramount. The industry and the National Institute for Occupational Safety and Health (NIOSH) have begun a careful evaluation of the issues.[1] SEMI, an industry trade group, has taken the position that "benefits and risks must be understood and weighed and supports scientific-based research and the responsible development and application of nanotechnology." Applied Materials supports SEMI's nanotechnology position and is carefully evaluating new uses of nanotechnology.

Nanoparticles produced incidentally (e.g., through the operation of a diesel engine or other combustion processes) and those produced intentionally as an additive (e.g., titanium dioxide or carbon nanotubes) are quite different from the nanomanufacturing technology processes Applied Materials creates for customers. Our experience with manufacturing at the nanoscale through the application of nanoscale coatings and our understanding of incidental ultrafine particles research is helping us address questions about the risks associated with nanoparticles, both those incorporated into products and those unintentionally released into the environment.

NIOSH has provisionally concluded that "nanomaterial-enabled products such as nanocomposites and surface coatings, and materials comprised of nanostructures such as integrated circuits (IC), are unlikely to pose a risk of exposure during their handling and use."

In our experience, nanotechnology risks can be addressed by implementing the following:

1. Consider all aspects and properties of nanoparticles (including reactivity and fire potential, for example) prior to use.
2. Exhaust residues from tool reaction chambers should be collected in the exhaust stream (and abated).
3. When cleaning a chamber, nitrile, latex or other impervious gloves must be used to avoid skin contact with nanoparticles.
4. Use local exhaust ventilation and High Efficiency Particulate Air (HEPA) filtration to capture nanoparticles that may be produced.
5. If it is necessary to handle nanoparticles outside of a HEPA-filtered, powered-exhaust laminar flow hood, appropriate respiratory protection is required.
6. Use wet methods whenever possible.
7. Vacuum cleaners should be tested, HEPA-filtered units.
8. Equipment used to handle, exhaust or capture nanoparticles should be evaluated for potential contamination prior to disposal or reuse for another purpose.

We believe the semiconductor manufacturing industry should actively engage with health and safety institutions like NIOSH and OSHA on nanotechnology safety. By doing so, we can better understand and address risks through protective measures as early as possible.

1 See "Approaches to Safe Nanotechnology: An Information Exchange with NIOSH," July 2006, version 1.1

EHS, Social Responsibility and Applied Materials' Global Supply Chain

In addition to enhancing our own environmental performance and offering products that enable our customers to reduce energy usage, waste and emissions, Applied Materials works closely with its suppliers to assure that they improve performance in these areas. In the spring of 2005, Applied Materials became the first company in the semiconductor equipment industry to adopt the Electronic Industry Code of Conduct (EICC) as its supplier code of conduct. The EICC outlines standards to ensure that working conditions in the supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible. It addresses various topics such as labor conditions, health and safety, environmental, and ethics. A copy of the EICC as adopted is available on our Web site.[1] The EICC was prepared using other international standards, including the International Labor Organization (ILO) Code of Practice in Safety and Health and the ILO International Labor Standards. Applied Materials acknowledges the principles of the ILO core labor standards.

Applied Materials requires all of the companies in its global supply chain that provide parts and assemblies to our manufacturing facilities to comply with the EICC. Our manufacturing activities consist primarily of assembling various commercial and proprietary components into finished systems at our manufacturing center in Austin, Texas. Manufacturing operations also are located in the Silicon Valley, California; Alzenau, Germany; and Rehovot, Israel. Fewer than 50 suppliers represent over 80% of the total amount spent by the company annually on its global supply chain. Most of these suppliers are sophisticated, multi-national companies. Although the majority of Applied Materials' current suppliers are located in the United States, the supply base is expanding into countries such as China, Mexico and Taiwan.

Applied Materials' Global Supply Chain Organization (GSCO) manages supplier relationships, develops supply chain capability and is primarily responsible for implementing the EICC and monitoring suppliers' compliance. Employees in this group work out of offices worldwide, with the majority located in the United States and China . Employees in this group also

Applied Materials, which maintains facilities in Austin, is a member of Clean Texas, an environmental leadership program dedicated to protecting air, water and land resources in Texas.

CLEAN TEXAS

1 See http://www.appliedmaterials.com/about/environment.html?menuID=7_2

EHS, Social Responsibility and Applied Materials' Global Supply Chain

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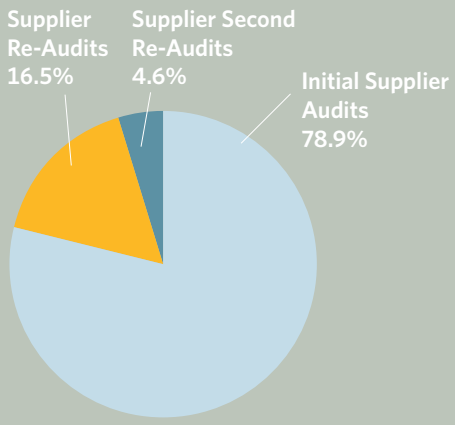
receive training on the EICC, how to conduct supplier assessments, and the auditing process, all with the goal of ensuring that suppliers understand and meet our expectations. The company implements and assures compliance with the EICC in a number of ways. The standard form of Global Supply Agreement requires suppliers to review, comply with, and implement the EICC, and to cause their sub-tier suppliers to implement this code. We also issue annual reminders of the EICC requirements.

The GSCO conducts initial, follow-up, and periodic audits of new suppliers as well as new facilities established by existing suppliers. In conducting initial audits, the GSCO uses a comprehensive evaluation checklist and related tools known as the "Integrated Supplier Assessment Tool" (ISAT). The ISAT was updated in 2007 to better align with EICC principles, and includes assessments of suppliers' quality and management systems, EHS systems and technical capabilities, among other things. In certain situations Applied Materials uses third-party audit companies to support our audit process. These companies are qualified and approved by us to conduct selected portions of our supplier audits using tools developed by the GSCO.

During 2006 through the first half of 2007, Applied Materials conducted over 100 audits at facilities belonging to more than 60 suppliers. These audits focused on our key global suppliers and the audits consisted of initial audits, re-audits and second re-audits:

ISAT Supplier Audits, 2006-2007



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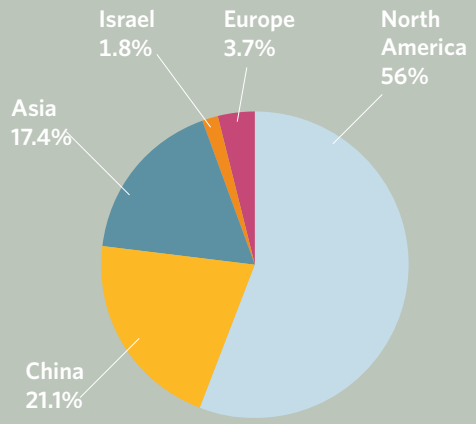
The following chart shows the breakdown of these audits by geographic location.

ISAT Supplier Audits, 2006-2007, by Location



In addition to audits, we require companies in our global supply chain to conduct self-assessments that focus on environmental, occupational safety, and product safety performance. We review the results of supplier self-assessments, provide the supplier with an evaluation, and request program improvements and corrective actions whenever warranted. If deficiencies in a supplier's EHS performance are identified, we may issue a supplier corrective action request, suggest a modification to a supplier process, or jointly develop with the supplier an improvement roadmap that outlines steps that must be taken to achieve the expected standard. Our supply base has been and continues to be responsive to our evaluations and, when required, specific requests for program improvements and corrective actions.

Other ways in which we communicate EICC requirements to suppliers include posting this information on a website established for companies in our global supply chain. We also communicate our expectations during supplier forums held from time to time that are attended by key suppliers' executives.

As part of Applied Materials' commitment to advance social and environmental responsibility—within both its supply chain and the semiconductor industry in general—the company is an active member of SEMI, a global industry association serving the advanced manufacturing supply chain, and a strong advocate of SEMI's Global Care™ initiative. The Global Care program seeks to establish an industry-wide framework premised on principles that include workplace health and safety, resource conservation and community service.

EHS, Social Responsibility and Applied Materials' Global Supply Chain

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Applied Materials continues to focus on the challenges of improving supply chain performance and enhancing the efficiency of the company's EICC implementation, monitoring and compliance processes. Looking ahead, Applied Materials is taking various steps to encourage the "greening" of its global supply chain. In that regard, EHS is partnering with GSCO and other internal organizations on three major initiatives. First, Applied Materials is joining the EICC Implementation Group, where we will work together with other member firms (including several of our key suppliers) to promote EICC objectives to improve working conditions and environmental stewardship throughout the electronics supply chain. As a member, we will also have access to EICC resources and tools to integrate into our supply chain business processes, including risk assessment, monitoring and reporting protocols. Second, we are developing green procurement guidelines to increase the usage of energy-efficient and environmentally-friendly components and supplies. In particular, we have challenged suppliers to reduce energy consumption in their operations and to reduce waste when packaging products for Applied Materials. For example, our wholly-owned subsidiary, Metron Technology, recently partnered with Toyota Industries to develop a line of vacuum pumps designed to use less than half the power of competing products when used in conjunction with Applied Materials' fabrication equipment. Third, we are expanding our assessment of our supply chain to include compliance with the company's green procurement guidelines and intend to incorporate the results into a more comprehensive sustainability report to be published regularly. Through these and future initiatives, Applied Materials intends to continue demonstrating industry leadership in the promotion of environmental stewardship and social responsibility.

EICC
Electronic Industry Code of Conduct

In 2005, Applied Materials became the first company in the semiconductor equipment industry to adopt the Electronic Industry Code of Conduct (EICC) as its supplier code of conduct.

Future Reporting, GRI Map and New Initiatives

Our EHS reporting is still evolving with this third external report and we hope to expand it further in 2009 or earlier. While in 2005 we anticipated closer alignment with the Global Reporting Initiative (GRI), it is still premature at this time. As a standalone EHS Report, it is difficult to map to the broader GRI factors. The GRI G3 guidance itself notes that "the sum of the topics and indicators reported should be sufficient to reflect significant *economic, environmental, and social impacts* (emphasis added)."[1] Given recent efforts to develop a sustainability strategy and ongoing efforts to integrate our many corporate citizenship activities, we anticipate publishing a report that covers all of the GRI dimensions in the near future. In the interim, we have re-mapped this report to the Environmental Performance Indicators in the G3 (see p. 31).

In commemoration of Earth Day 2007, Applied Materials employees planted trees on our global campuses including Xi'an, China, our new lab and office facility that opened in March 2007.

We are proceeding with plans to join the EICC Implementation Group. Applied Materials has adopted the EICC and has published it to first-tier suppliers, and we are now ready to share best practices with the EICC Implementation Group and to start incorporating EICC content into audits and other business processes.

Other subjects that we plan to report further on in the future include:

- An expanded inventory of other significant direct and indirect greenhouse gas emissions, such as leased office spaces and business related travel, as well as proposed mitigations.
- Information on our Metron parts cleaning business. The parts cleaning business is aimed at refurbishing and reconditioning parts for further use by our customers, thereby substantially extending product life and reducing waste generation. We will include Metron data in the next report and share data as it becomes available in the interim through our external Web site.
- A profile of our new lab and office facility in Xi'an, China—the first lab we have opened outside of North America in some time. The facility opened in March 2007 so there is no data available on normal operations. We are pleased to report that about 1.2 million person-hours were logged on the construction without a single lost-time injury; we accomplished this feat by providing all of the necessary personal protective equipment, use of extensive signage and training and by employing two separate site monitors. In a future report we will describe the various pollution controls that were incorporated into the facility as part of China's environmental impact assessment (EIA) process. Because the EIA process is rigorous and Chinese standards are demanding, even in comparison to Western standards, we expect this facility to maintain a high level of environmental performance.

1 G3 Online, **http://www.globalreporting.org/ReportingFramework/G3Online/DefiningReportContent/**

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Environmental Performance Indicators (G3)

Global Reporting Initiative Reference			
	Materials	**Coverage**	**Relevance**
1	Use of materials	full	high
2	Percentage of materials used that are recycled materials	full	high
	Energy		
3	Direct energy consumption by primary energy source	full	medium
4	Indirect energy consumption by primary source	no	low
5	Energy saved due to conservation and efficiency improvements	full	high
6	Initiatives to provide energy efficient or renewable energy and their reductions	full	high
7	Initiatives to reduce indirect energy consumption and reductions achieved	partial	medium
	Water		
8	Total water withdrawal by source	partial	low
9	Water sources significantly affected by withdrawal of water	no	low
10	Percentage and total volume of water recycled and reused	partial	medium
11	Location and size of land owned or leased in or near protected areas or high biodiversity areas	no	low
12	Description of significant impacts of activities, products, services on biodiversity inside or outside of protected areas	no	low
13	Habitats protected or restored	no	low
14	Strategies, current actions and future plans for managing impacts on biodiversity	no	low
15	Number of ICUN Red List species and national conservation list species with habitats in areas affected by operations, by extinction level risk	no	low
	Emissions, Effluents and Waste		
16	Total direct and indirect greenhouse gas emissions by weight	full	high
17	Other relevant indirect greenhouse gas emissions by weight	full	low
18	Initiatives to reduce greenhouse gas emissions and reductions achieved	full	high
19	Emissions of ozone-depleting substances by weight	no	low
20	NO_X, SO_X and other significant air emissions by type and weight	no	low
21	Total water discharge by quality and destination	partial	high
22	Total weight of waste by type and disposal method	partial	high
23	Total number and volume of significant spills	no	medium
24	Weight of transported, imported, exported or treated waste	partial	low
25	Impacts of activities/operations on protected and sensitive areas	partial	low
26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected through discharge of water and runoff	partial	low
27	Percentage of products sold and their packaging materials that are reclaimed by category	partial	medium
28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with enivronmental laws and regulations	full	high
29	Significant environmental impacts of transporting products and other goods and materials used for operations and transporting employees	partial	medium
30	Total environmental expenditures and investments by type	partial	high

Finally, as part of our sustainability initiative, we are launching a variety of projects in several areas, including facility energy and water conservation, renewable energy, office and general operations, and employee education and outreach. Some examples include:

- We have issued every employee in our California and Texas offices a reusable mug and are targeting a reduction in the usage of styrofoam cups by over 50%.
- We are similarly launching a paper use reduction campaign in conjunction with the introduction of multi-functional devices in all offices (printer/fax/copier combos with defaults to duplex printing).
- Our Austin campus has transitioned to water-conserving landscaping (xeriscaping) and reduced water usage through this technique and other conservation strategies. We are offering workshops to the community on this technique as well.
- A new program designed to accommodate a mobile workforce, Applied Anywhere, has been launched and has the potential to take commuters off roads. As of today, there are more than 1,900 regional employees utilizing a flexible work location and we anticipate close to 500 new entrants by the end of fiscal year 2007.
- In cooperation with local environmental organizations, the Company's intranet includes a portal where employees can calculate their personal greenhouse gas emissions (from home energy usage, vehicle miles and air travel) and can purchase offsets from one of several reputable offset providers. Using a counter on the site, we plan to determine the emissions avoided by Applied Materials employees who use this site.

We are excited about these projects, big and small, and will share as much information and data on the results as we can.

What Others Are Saying About Environmental Responsibility at Applied Materials

"Applied Materials is taking a good look at the future and seeing prosperity in environmentally sustainable practices. Through leadership from the top and dedicated efforts from within, Applied Materials has taken on ambitious goals that will challenge and inspire others to do the same. I applaud their efforts! "

Margaret Bruce
Director, Environmental Programs
Silicon Valley Leadership Group
Co-Chair, Sustainable Silicon Valley

"Samsung is appreciative of Applied Materials' commitment to environmental, health and safety, and we enjoy working with Applied on EHS issues. Applied's concern for safety is evident in the training its engineers receive and the attention that is given to equipment safety matters. Applied has been very responsive to our EHS concerns and has contributed to Samsung's ability to meet its EHS goals. We look forward to working with Applied on energy savings, global warming and other issues that all companies are dealing with now. "

Seung-Ki Chae, Ph.D.
Vice President, Manufacturing Technology Team II
Memory Division, Semiconductor Business
Samsung Electronics Co., Ltd

"So many large companies these days reduce their environmental activities to public relations efforts. I am particularly proud to work at Applied Materials, where I have been for the last seven years, since we are in the vanguard of those few companies making substantive contributions to environmental stewardship.

Some months back, aware of Applied Materials' long track record of continuously striving to improve our environmental performance programs, I facilitated a meeting between our head of Environmental, Health and Safety and the Silicon Valley chapter of the Sierra Club to discuss climate change issues. Since that time, I have learned about our strong commitment to using renewable energy. I am inspired by the fact that Applied Materials has taken these steps energetically and swiftly.

In the future, I hope and expect that we will continue to pursue greater levels of environmental performance, which includes more reliance on renewable energy sources, purchase of more energy efficient equipment, and green building initiatives."

Chris Cocca
Software Engineer, Central Software Support Group
Applied Materials, Inc.

Feedback on Applied Materials 2007 Environmental Responsibility Report

Applied Materials wants to improve the quality of its environmental, health and safety reporting, and your feedback is important to us. This questionnaire can also be completed online.[1]

Personal Information Policy

Any information provided will be used only for the purpose of responding to specific inquiries. A summary of the results of this questionnaire may be used in the next Environmental Responsibility Report.

Inquiries

Corporate Environmental, Health and Safety
Applied Materials, Inc.
3050 Bowers Ave, M/S 10071
P.O. Box 58039
Santa Clara, CA 95052-8039
Email: Bruce_Klafter@amat.com

1. Please indicate your relation to Applied Materials:

- ○ Applied Materials employee
- ○ Shareholder
- ○ Customer
- ○ Supplier/business partner
- ○ Member of a non-governmental organization
- ○ Other (please describe) _____
- ○ Member of the media
- ○ Researcher/student
- ○ Financial analyst
- ○ Member of a government agency
- ○ Person in charge of Corporate Sustainability Support at another company

2. What is your impression of the report?

Overall	○ Good	○ Average	○ Poor
Quality of information	○ Sufficient	○ Too little	○ Too much
Amount of information	○ Sufficient	○ Too little	○ Too much
Readability	○ Good	○ Average	○ Poor

Please provide additional detailed comments below:

3. Are there topics of interest to you that were not covered?

4. Please use this space to provide any other comments or requests you may have regarding Applied Materials Environmental Responsibility Report or our programs.

Thank you for your feedback!

1 http://www.appliedmaterials.com/about/environment.html?menuID=7_2

www.appliedmaterials.com

3050 Bowers Avenue
P.O. Box 58039
Santa Clara, California
95052-8039
TEL 408.727.5555

This Report contains forward-looking statements, including statements regarding future growth, the implementation and expected impact of the company's environmental, health and safety (EHS) initiatives, EHS and sustainability goals, product capabilities, operational efficiencies, and financial performance. These forward-looking statements are based on management's estimates, projections and assumptions as of the date hereof and include the assumptions that underlie such statements. Forward-looking statements may contain words such as "may," "will," "should," "could," "would," "expect," "plan," "anticipate," "believe," "estimate," "predict," "potential" and "continue," the negative of these terms, or other comparable terminology. These statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. Risks and uncertainties include, but are not limited to: global economic and industry conditions; customers' capacity requirements, including capacity utilizing the latest technology; the company's ability to successfully develop, deliver and support a broad range of products and expand its markets and develop new markets; the successful implementation and effectiveness of initiatives to enhance global operations; the successful integration and performance of acquired businesses; the technological, operational and financial feasibility of EHS initiatives; the company's ability to align costs with business conditions; and other risks described in Applied Materials' Securities and Exchange Commission filings. The company undertakes no obligation to update any forward-looking statements.

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