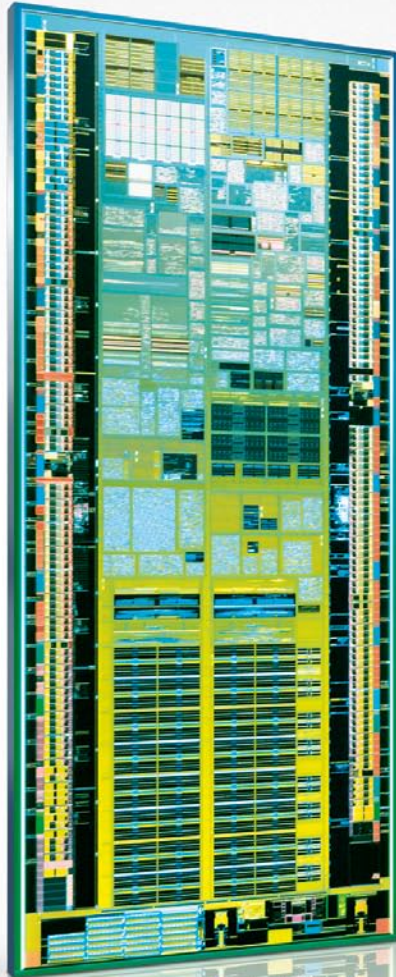


Taking a leadership position in environmental action worldwide



## Environment

Intel co-founder Gordon Moore, a long-time champion of the environment, helped instill a passion for innovation at Intel that we apply not only to developing new technologies, but also to helping address complex environmental issues such as climate change and natural resource conservation. We incorporate environmental performance goals into our day-to-day business activities, from how we design and manufacture our products to how we build and operate our facilities, manage resources, and handle waste materials.

Manufacturing cutting-edge silicon chips presents challenges in areas such as air emissions and energy, resource, and water use. These challenges increase in complexity as we push the boundaries of materials science in our process technologies. We continually strive to achieve higher levels of performance, reliability, and energy efficiency, while at the same time working to minimize our environmental footprint.

Beyond our own operations, we collaborate with customers, suppliers, governments, and industry to address sustainability challenges. In addition, our employees are actively engaged in environmentally focused volunteer efforts in the communities where we are located around the world. For more information, see “Volunteering for the Environment” in the Community section of this report.

Our most material environmental issues—informed by an analysis of the impacts of our operations and products, and by stakeholder input—include climate change, sustainability in our operations, and responsible product design and life-cycle management.

### 2007 Highlights

- Reduced absolute energy use by 2%. We remain on track to meet our goal to reduce energy use per chip by an average of 4% per year through 2010.
- Co-founded with Google the Climate Savers Computing Initiative, with the goal of reducing greenhouse gas emissions from computing systems.
- Realized savings of 3 billion gallons of water in our global operations in 2007 as a result of our water conservation investments and actions over the past 10 years.
- Announced that we are working in partnership with the U.S. Green Building Council to certify our new Fab 32 in Chandler, Arizona to the LEED green building standard.
- Shifted to a lead-free manufacturing process for our new Intel 45nm Hi-k metal gate silicon technology.
- Collected more than 2 million pounds of electronic waste at community collection events.

### 2007 Challenges

- The increasing complexity of our manufacturing processes challenges our ability to reduce our environmental impact. For example, a new process initiated in 2007 requires more water, making it harder to meet water reduction goals.
- Accessing new chemistries and materials needed to develop the latest innovative technology is increasingly challenging, as governments and customers continue to limit the use of different materials.
- We continue to seek ways to more effectively communicate with our employees about our environmental strategies.

## Climate Change



At Intel, we consider global warming an important environmental issue, and we long ago began taking steps to mitigate our climate change impact. We focus our efforts in three main areas: reducing our operational footprint, improving the energy efficiency of our products, and driving climate

leadership initiatives. For Intel's formal position on global climate change, visit our [Climate & Energy Conservation](#) web site.

### Reducing Our Operational Footprint

Our efforts to reduce the climate change impact from our operations are focused in two main areas: reducing greenhouse gas emissions and minimizing the amount of energy used in our manufacturing operations.

### Greenhouse Gas Emissions

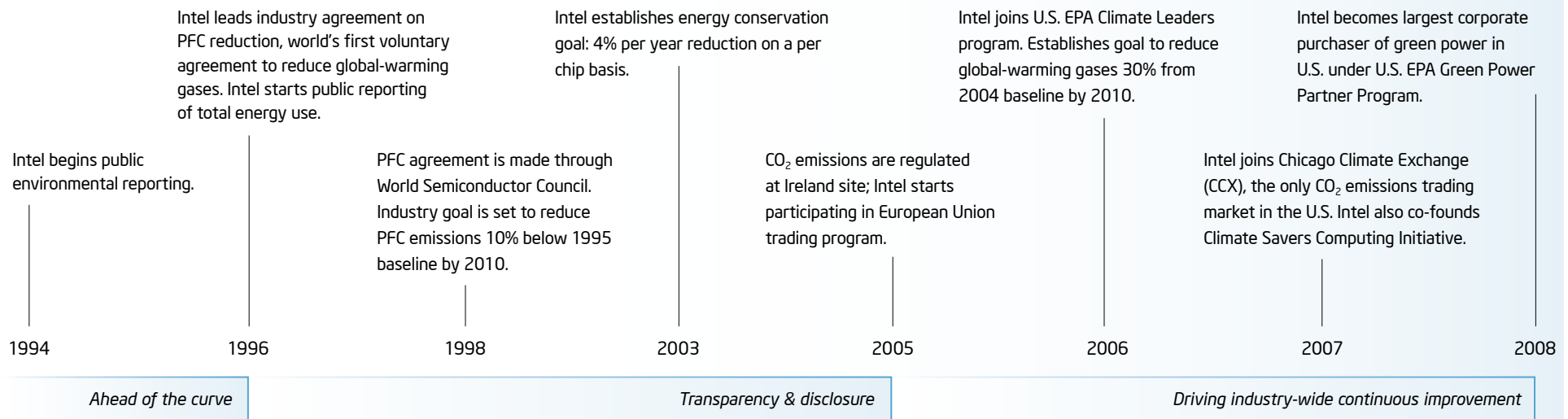
In 1996, we helped lead the development of a voluntary agreement between a semiconductor industry coalition and the U.S. Environmental Protection Agency (EPA) to reduce emissions of perfluorocompounds (PFCs). PFCs—chemicals that are used in semiconductor manufacturing—have a potentially high global-warming impact. This agreement was reached a year before the Kyoto Protocol was negotiated, and was ultimately expanded to include semiconductor companies around the globe. Under this first-of-its-kind agreement, a goal was established to reduce emissions 10% below 1995 levels by 2010. Since 2000, Intel has reduced our own PFC emissions by 56% in absolute terms and 95% on a per chip basis, keeping us on track to meet this challenging goal.

Addressing PFC emissions is just one part of our overall climate strategy. Intel is also a member of the EPA's Climate Leaders program, an industry-government partnership working to develop

goals and strategies aimed at reducing overall climate change, including PFC emissions. Partners in the program set aggressive greenhouse gas emissions reduction goals and inventory emissions to measure progress. Intel has set a goal to reduce our total worldwide greenhouse gas emissions by 30% per unit of production from 2004 through 2010. As of the end of 2007, we were on track to meet this goal, having reduced emissions 20% below 2004 levels.

In April 2007, Intel also became a member of the Chicago Climate Exchange (CCX), the world's first and North America's only voluntary, legally binding greenhouse gas emissions reduction, registry, and trading program. CCX is the only organization in the U.S. driving greenhouse gas emission goals using market mechanisms and CO<sub>2</sub> credits. CCX members commit to an emissions reduction schedule that requires year 2010 emission reductions of 6% below a baseline of average annual emissions from 1998 to 2001.

#### Intel's Climate Awareness Timeline



## Driving Energy Efficiency in Our Operations

Over the past five years, we have reduced our energy use per chip produced by 17% from a 2002 baseline. In 2007, we achieved a 2% absolute reduction compared to 2006, although energy use per chip produced increased 4%. We remain on track to meet our goal to reduce energy consumed per chip produced by an average of 4% per year from 2002 through 2010. We have also set a new five-year goal to reduce energy use per chip by an average of 5% per year from 2007 through 2012.

Since 2001, Intel has invested over \$20 million in more than 250 energy conservation projects, saving in excess of 500 million kilowatt-hours (kWh)—enough energy to power more than 50,000 U.S. homes. We have implemented a dedicated capital funding program that allocates funds solely for the purpose of resource conservation and efficiency projects. By limiting funds from being reallocated to other purposes, this program underscores the importance that we place on reducing energy consump-

### Intel Environment Award at Tech Museum Awards

The Tech Museum Awards honor innovators from around the world who are applying technology to benefit humanity. Intel sponsors the Environment category of these awards, which recognize individuals and groups who apply technology to address the most urgent critical issues facing our planet. In 2007, Intel Environment Tech Museum Award Laureates: developed a system using metal particles and cooking oil to remove toxics from ground water; used seaweed to absorb waste from salmon farming while providing feed for aquaculture; developed a system to trap toxic emissions from coal-fired power plants; applied technology to transform invasive aquatic plants into cooking fuel; and combined wind, solar, and hybrid technologies into a cleaner way to power boats. The project teams came from Australia, Canada, Chile, and the U.S.

Since the Tech Museum Awards were launched in November 2000, the range of projects and geographical diversity of honorees have been broad. For more information about the Intel Environment Award and the Tech Museum Awards program, visit the [Tech Museum Awards](#) web site.

tion in our operations. Our energy-efficiency and conservation improvements to date have included installation of more efficient lighting and “smart” system controls; boiler and chilled water system improvements; and cleanroom heating, ventilation, and air-conditioning improvements. In 2007 alone, we implemented projects that saved approximately 90 million kWh of energy.

Examples of projects include initiatives in Ireland and New Mexico to install higher efficiency boilers, which reduced natural gas consumption an average of 7% while maintaining the same energy output. In Ireland, this has led to annual savings in excess of \$200,000. In New Mexico, the replacement of boilers is expected to generate annual savings of \$75,000 and result in significant emission reductions, particularly CO emissions. In Swindon, U.K., we improved energy efficiency by replacing two 20-year-old boilers and upgrading lighting control systems, saving an estimated 300,000 kWh per year. In addition, across many of our sites, optimization of oil-free air controls and automatic dryer blow-down valves has led to annual savings of more than \$200,000.

In addition to reducing energy consumption in our operations, we strive to use cleaner sources of energy where feasible, in keeping with our belief that businesses must play a key role in driving the market for new, cleaner sources of energy. For years, we have been purchasing wind power at some of our sites, and, in fact, have been the largest purchaser of wind power in Oregon since 2004 and a major purchaser in New Mexico.

## Improving the Energy Efficiency of Our Products



Intel has a long history of commitment to energy efficiency—not just in our factories, but also in the design of our products. We have established and intend to maintain a leadership position in providing the most efficient semiconductors that will drive energy-efficiency progress in our customers’ equipment. Our Intel® Core™ Duo processor family is a good example of products that feature both world-class computing performance and significant improvements in energy efficiency.

## Purchasing Renewable Power



At the beginning of 2008, we announced plans to purchase renewable energy certificates (RECs) to support the generation of more than 1.3 billion kWh a year as part of a multi-year contract.

“Our renewable purchase is just one part of a multifaceted approach to protect the environment, and one that we hope spurs additional development and demand for renewable energy,” said Intel President and CEO Paul Otellini.

The purchase placed Intel at the top of the EPA’s Green Power Partnership “National Top 25” list and “Fortune 500 Challenge” list. The EPA’s Green Power Partnership program encourages and recognizes organizations that buy green power as a way to reduce the environmental impacts associated with purchased electricity use. We hope that Intel’s sizable purchase will help stimulate the market for green power, leading to additional generating capacity and, ultimately, lower costs.

According to the EPA, our purchase—which includes a balanced portfolio of wind, solar, small hydro-electric, and biomass sources—has the equivalent environmental impact of taking more than 185,000 passenger vehicles off the road per year. The purchase will be handled by Sterling Planet, a leading supplier of renewable energy, energy efficiency, and low-carbon solutions. The purchase will be certified by the nonprofit Center for Resource Solutions’ Green-e program, which certifies and verifies the RECs. RECs are a commonly accepted currency to represent a displacement of pollution, and are monetized and traded in the marketplace. REC records are kept by generators of renewable energy, and then certified as evidence that a given kWh was, in fact, produced using renewable energy, whether from solar, wind, or other sources.

Product energy efficiency has become top of mind in our industry, given the growing demand for more powerful electronics, the increasing cost of energy consumed by information technology, and the corresponding impact on the environment. In 2007, we further strengthened our leadership position in energy efficiency with the delivery of products such as the industry's first processors based on 45nm Hi-k metal gate silicon technology. These products have set a number of records on key industry performance benchmarks while consuming less power, compared to chips built using our 65nm technology.

We are also working with government and others in our industry to establish benchmarks and demonstrate the feasibility of deploying energy-efficient products and technologies. For example, we are actively engaged with the EPA in developing the latest Energy Star\* computing standards, and our energy-efficient processors are a part of many Energy Star-compliant computing systems.

In 2007, Intel and a host of industry partners established the first industry-wide energy-efficiency benchmark, SPECpower\*, which considers both energy and work output to enable meaningful measurements and comparisons of server systems. Based on this metric and independent results, as of early 2008, servers configured with the Intel® Xeon® processor 5400 series were among the most energy-efficient servers available on the market.

To facilitate industry awareness about energy efficiency in data centers, Intel has developed and deployed a number of proof-of-concept demonstrations, most notably the Eco-Rack. The Eco-Rack was developed to show that by integrating leading energy-efficient products and technologies already available on the market, it is possible to create a rack of servers that requires 16%–18% less power than a standard server rack while delivering the same level of performance. For more information on the Eco-Rack, view or download [a recent white paper](#).

## Driving Climate Leadership Initiatives

We recognize that meeting the challenge of climate change requires the participation of many groups. In addition to our focus on reducing the climate change footprint of our operations and our products, Intel has taken a leadership role in a number of key initiatives, working with other stakeholders to address the challenges associated with climate change.



### Climate Savers Computing Initiative.

Intel and Google jointly launched the Climate Savers Computing Initiative in June 2007, with the goal of building awareness and encouraging the use of more efficient components and power management features to reduce IT-related CO<sub>2</sub> emissions by 50% by 2010. The initiative is unique in that it unites industry, consumers, government, and conservation organizations—securing commitments from manufacturers to produce and sell more energy-efficient products and encouraging end customers to purchase computers with higher efficiency components. Climate Savers is well on its way to achieving its goals, having secured over 140 corporate commitments by the end of 2007. For more information, visit the [Climate Savers Computing](#) web site.

**The Green Grid.** In an effort to advance energy efficiency in data centers, Intel joined the Green Grid in 2007. The Green Grid is a global consortium of companies dedicated to energy efficiency in data centers and business computing ecosystems. The Green Grid seeks to provide industry-wide recommendations on best practices, metrics, and technologies that will improve overall data center energy efficiencies. For more information, visit the [Green Grid](#) web site.

**LessWatts.org.** Unveiled at the Intel Developer Forum in September 2007, the LessWatts.org initiative brings together developers, users, and system administrators to promote power-savings in Linux\*-based servers. In large data centers, server power consumption has significant financial and environmental costs; LessWatts.org facilitates the sharing of information on this issue. For more information, visit the [LessWatts.org](#) web site.

**Copenhagen Climate Council.** Intel President and CEO Paul Otellini was invited to join the Copenhagen Climate Council, an independent global initiative founded in May 2007 by a core group of business leaders and scientists. The initiative's goal is to advance a new global climate treaty that will come into force when the first commitment period of the Kyoto Protocol ends in 2012. For more information, visit the [Copenhagen Climate Council](#) web site.

**National Academies of Science Study.** As a participant in the National Academies of Science study "America's Energy Future: Technology Opportunities, Risks, and Tradeoffs," Intel committed in 2007 to fund research on effective solutions for the environment and provide advice to policy makers. This study will critically evaluate the current and projected state of development of energy supply, storage, and end-use technologies. The work will analyze the role of public policy in determining the demands and costs of energy and the configuration of the nation's energy systems. For more information, visit the [National Academies](#) web site.

**EU Energy Efficiency Study.** Intel, along with the American Electronics Association in Europe, helped sponsor a study for the European Union that will focus on identifying ways that technology can help the European Union meet its goals to improve energy efficiency and reduce global-warming emissions.

**GeSI Study.** Intel is participating in an international strategic partnership of companies on a study being led by the Global e-Sustainability Initiative (GeSI). The study is aimed at finding additional opportunities where information technology can be used throughout the economy to drive greater energy efficiency and reduce global-warming emissions. For more information, visit the [GeSI](#) web site.

**Developing Industry Standards.** We are working closely with SEMATECH (a consortium of semiconductor companies, suppliers, universities, and government) and with other companies to develop standards to improve the energy efficiency of manufacturing tools and processes in our industry. For more information, visit the [SEMATECH](#) web site.

## Driving Sustainability in Our Operations

Building and designing the world's most sophisticated products involves addressing many environmental areas in addition to climate change and energy efficiency, such as water conservation, air quality, and materials recycling. Our commitment to continuous improvement is integrated into our efforts to drive more sustainable practices in our facilities.

This "Design for the Environment" philosophy is the basis of our product life-cycle management approach. Intel EHS engineers are involved in all phases of Intel's product design and development processes, addressing the environmental challenges of each new generation of technology before manufacturing processes are put in place. For example, our engineers help drive the design of products that are lead-free<sup>1</sup> or use less energy. They also participate in building design, calculate environmental performance levels for tools and processes, and set environmental production performance goals for each new manufacturing process technology.

### Greener Buildings



Intel engineers have been evaluating "green" design standards and incorporating green building concepts and practices into the construction of our buildings for several years.

In 2006, we announced plans to obtain Leadership in Energy and Environmental Design (LEED) certification for IDC9, a new Intel design center in Haifa, Israel. IDC9 should be ready for occupancy in August 2008, and we anticipate that when it opens it will be the first LEED-certified building in Israel. LEED, a green building rating system developed by the U.S. Green Building Council, provides a set of voluntary, consensus-based standards for developing high-performance, sustainable buildings. IDC9 is being constructed with LEED in mind. The building includes an

internal patio that infuses natural light into all levels, air-conditioning and electrical systems that save and recycle energy, and an irrigation system that uses recycled water. Soil, rock, and asphalt on IDC9's building site were recycled and reused as raw materials for adjacent road construction. In addition, our construction of a green building in Israel has helped motivate the local construction community to embrace more sustainable practices.

Intel has partnered with the International SEMATECH Manufacturing Initiative and the U.S. Green Building Council to develop LEED criteria specifically for wafer fabrication facilities (fabs) and high-tech manufacturing. In October 2007, Intel announced plans to obtain LEED certification for Fab 32 in Chandler, Arizona. The building design incorporates a number of energy and water conservation measures. We will continue to work toward existing-building LEED certification, but due to the data collection and procedural requirements, the certification may take up to four years.

In 2007, we also broke ground on our first fab in China, known as Fab 68. Our \$2.5 billion investment in Fab 68, located in Dalian, will help to extend not only our manufacturing and technology leadership in China, but also our environmental leadership. We are applying the same world-class design and construction standards to Fab 68 that we apply globally, including the incorporation of environmental and energy-saving features. For example, Fab 68 is designed to draw a reduced amount of city water, and the facility's ultra-pure reclaim water system will capture and recycle about 60% of the water used at the facility. This water will then be used in the fab's mechanical closed-loop systems.

Fab 68 will be the first fab in China to install point-of-use abatement technology on dry etching tools to reduce overall emissions. The facility's heat recovery chillers are designed to significantly reduce energy use for air conditioning and water heating. As a result, the fab's boiler emissions will be significantly lower than those at other fabs, and the entire facility will operate on just one boiler rather than three. The fab's fire extinguisher systems will use a material called Halotron, whose global-warming potential is estimated at 127 times less than materials used in traditional systems. Hundreds of various small and large measures used at our other factories—such as smart fans and cool lights—will also

### ISO Environmental Management Systems

In 2007, we extended our certification to the internationally recognized ISO 14001 standard through 2010, ensuring that we maintain a comprehensive management system that clearly defines and tracks global performance to environmental goals and initiatives. As we continue to expand manufacturing operations into new global markets, we use the same best-known methods, or our "copy exactly" philosophy, for implementing world-class environmental programs and certifying new manufacturing sites to the ISO 14001 standard. We have maintained a multi-site ISO 14001 certification for all manufacturing locations since 2001 and demonstrate our commitment to worldwide environmental excellence by completing independent third-party audits at various sites each year. In addition to our ISO certification, we maintain comprehensive compliance assurance programs consisting of routine site self-assessments and corporate-led, multi-disciplinary compliance audits. Our independent EHS audits focus on regulatory compliance, management systems designed to maintain compliance, and proactive identification of potential EHS issues that could affect site operations.

### Feng Shui at Fab 68

Intel is on track to begin production at Fab 68 in Dalian, China in 2010. We consulted Chinese feng shui masters to seek harmonious relationships with the wind, sun, and interior spaces at Fab 68. As a result, the building uses the sun's seasonal path to optimize heating and cooling loads, and the facility is in alignment with the feng shui concept of "qi" (ch'i), or flow of energy.

<sup>1</sup> Our 45nm products are manufactured on a lead-free process. Lead is below 1,000 PPM per European Union Restriction of Hazardous Substances (RoHS) Directive of July 2006 (2002/95/EC, Annex A). Some RoHS exemptions for lead may apply to other components used in the product packaging.

be used at Fab 68. We expect Fab 68 to be a state-of-the-art facility and a leading example of environmental construction, as well as one of our most cost-efficient facilities. To learn more about how we are incorporating environmental design into Fab 68, [watch the video](#).

### Chemical Review, Use, and Selection

Intel carefully reviews all chemicals for their impact on human health and the environment before use. We seek alternatives for materials that are considered hazardous, and when we must use hazardous materials, we specify rigorous controls to ensure that they are handled safely from the time they enter our operations until they are properly disposed of or recycled.

Included in our review are all materials: purchased or specified by Intel for research and development, used during manufacturing processes, incorporated into our products, and used during facility construction. The review begins with a search of all applicable chemical regulations and use restrictions.

Because our manufacturing facilities are located in many countries, the regulatory search includes Intel-specific prohibitions (often above and beyond local regulatory requirements), local site-specific regulations, as well as global and country-specific regulations. Materials that are prohibited from use in an Intel product are identified and removed from the manufacturing process to ensure compliance with applicable product content regulations.

The second phase of our chemical review process includes the identification of controls necessary to protect personnel and the environment during a particular chemical's intended use. We support a precautionary approach to the materials used in our products.

In 2007, Intel engineers replaced isopropyl alcohol (IPA) with a less volatile chemical in our lithography process to reduce air pollution. While IPA is a fairly benign chemical, it does contribute to smog. Finding an alternative for IPA is a prime example of our chemical selection process at work.

As technologies increase in complexity, our environmental challenges change. For instance, although we do not expect to move

to 450mm wafers for semiconductor manufacturing until 2012, we are already working on environmental challenges and targets related to materials selection and new technologies for processing larger wafers.

### Water Conservation

Water conservation continues to be a key focus area at our sites in the U.S. and around the world—particularly those in arid locations. As we work to achieve higher product performance and reliability, our manufacturing processes become more complex—making it more difficult to reduce our environmental impact. For example, a new process initiated in 2007 requires additional water, making it harder for us to meet our water reduction goals.

Over the past 10 years, we have invested more than \$100 million in water conservation programs at our global facilities. As a result of these efforts, we now reclaim more than 3 billion

#### Xeriscape Conference in New Mexico



For the past several years, Intel has supported the Water Conservation and Xeriscape Conference held in Albuquerque, New Mexico. Participating in the annual conference gives Intel

the opportunity to promote and share best practices on water conservation with national specialists and local residents. Intel was the presenting sponsor of the 12th Water Conservation and Xeriscape Conference, held in 2007. We hosted a break-out session and had a booth highlighting the massive xeriscape project at our Rio Rancho site and describing its impact on water use. "The Xeriscape Council of New Mexico has valued and appreciated Intel's support for years," said Scott Varner, executive director of the Xeriscape Council. "Intel has shown how much a major water user that is required to use a tremendous volume of water in its production process can achieve through concentrated conservation and recycling efforts." For more information on the conference and xeriscaping, visit the [Xeriscape Council of New Mexico](#) web site.

gallons of wastewater each year instead of tapping into precious fresh-water sources. Between 1998 and 2007, our water conservation programs saved approximately 100,000 acre feet of water—enough to supply more than 280,000 U.S. homes for an entire year. In 2007, our absolute water used decreased by 2%; water use per chip increased by 4%. To drive further improvements in this area, Intel established a team to develop a plan to further reduce water use and develop a new water goal for the company.

Each of our new factories is equipped with complex wastewater collection systems that include a separate drain system for collecting lightly contaminated wastewater for reuse. With this reuse strategy, we harvest as much water as possible and direct it to our facilities equipment such as cooling towers and scrubbers.

Working with other industry experts, we continually strive to reduce water use in our manufacturing processes. With our ongoing conversion to 300mm wafers, for example, we have reduced water use approximately 40% for each square centimeter of wafer surface area compared to older 200mm wafer technology.

In Arizona, Intel and the City of Chandler developed a cooperative water sustainability program. As a result of the program, since 1996, more than 3 billion gallons of rinse water have been purified and safely reinjected directly into the groundwater aquifer for immediate reuse as a potable water source. In 2007, we received the U.S. EPA's prestigious Water Efficiency Leader Award in the Corporate category for the comprehensive water management strategies at our Ocotillo, Arizona campus. Major efforts at the site included the collective recycling of 75% of the water used during manufacturing, which reduced the net demand for city water; the take-back of 825 million gallons of treated wastewater from the city's wastewater plant; the internal reuse of 530 million gallons of water; and the treatment of 575 million gallons of water to drinking-water standards, and the return of that water to the local groundwater aquifer.

Intel India implemented a number of water initiatives in 2007, including a wastewater treatment plant (WWTP) and a rain-water harvesting (RWH) unit. The WWTP treats and recycles about 57,000 liters of sewage water collected from buildings every day. The plant is equipped with an operational capacity of 100 cubic meters of sewage per day. The solid waste that is

separated at the WWTP is converted into bio-fertilizer that is used in the site's gardens. The lush green plants and approximately 750 trees surrounding the campus thrive on the bio-waste. The RWH project routes water from the site's rooftops into underground tanks. This water is then used to irrigate the site's gardens, ponds, and fountains.

### Reduction of Air Emissions

Through careful design of our production processes and continuous monitoring of our air pollution abatement equipment, every Intel campus is defined as a "minor source" by the U.S. EPA for both volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). Where we cannot eliminate VOCs and HAPs through process optimization, we install wet scrubbers to neutralize and absorb gases and vapors, or thermal oxidizers to destroy them. Both of these air-pollution abatement technologies are designed with maximum efficiencies in mind. Wet scrubbers continuously

#### Intel Employee Sustainability Network

Intel employees have become increasingly passionate about the environment and sustainability issues. To foster this interest, the Intel Employee Sustainability Network (IESN), a chartered Intel Employee Group, provides networking and volunteer opportunities, and facilitates a variety of educational forums. Members of the group are active in the community, and their efforts complement Intel's corporate environmental focus areas. IESN programs are typically coordinated with Intel's EHS, Intel Involved, Public Affairs, and Corporate Services organizations. Examples of the group's activities include participating in commute impact reduction programs, supporting electronic waste recycling projects, improving cafeteria practices, and hosting invited speakers. IESN also delivers Northwest Earth Institute discussion group courses at several Intel sites. In addition, IESN members help solicit nominations for and help judge our internal Intel Environmental Excellence Awards program.

**On many of our campuses, our actual air emissions are less than a fifth of the level that our air permits allow. We minimize all emissions to the atmosphere, regardless of the higher limits potentially available to us from local, state, and federal agencies.**

recirculate water that contains a neutralizing agent to remove acidic gases and other contaminants. Thermal oxidizers first concentrate VOCs, and then oxidize them into carbon dioxide and water vapor. The heat used in this process passes to a regeneration wheel, where it can be reused again and again.

On many of our campuses, our actual air emissions are less than a fifth of the level that our air permits allow. We minimize all emissions to the atmosphere, regardless of the higher limits potentially available to us from local, state, and federal agencies. For example, in 2007—although we were well below our legally permitted limits—we spent \$4 million to install additional air-pollution abatement equipment to further reduce our air emissions at one of our fabs in Oregon.

### Waste Reduction, Reuse, and Recycling

We have committed to conserving resources and minimizing waste through effective reuse and recycling programs in our operations worldwide.

#### New Process Formulation

In 2006, we made a change to one of the chemical processes used to manufacture semiconductor wafers, allowing us to decrease the use of a particular chemical by 40%. The change translated into significant reductions in both waste volume and VOC emissions. In our Oregon and Ireland fabs alone, we eliminated 49,500 gallons of chemical waste and 0.5 tons of VOC emissions over the past two years.

### Chemical Waste

We continue to increase the recycling rate of the chemicals used in our manufacturing processes. In 2007, we recycled or directly reused 87% of our chemical waste, up from 68% in 2006 and exceeding our 2007 goal of 70%. In 2007, we aligned with our benchmark companies and included fuel substitution in the calculation for chemical recycling. Fuel substitution can be beneficial when recycling facilities are located close to the operating facilities, thereby minimizing transportation distances. For 2008, we are raising our chemical waste recycling goal to 80%. The amount of chemical waste generated decreased 22% from 2006 to 2007, and our per chip rate decreased 18%.

Much of our success in reducing our chemical waste in 2007 was due to waste minimization in a type of semiconductor chip packaging known as "C4." Cross-functional Intel teams built predictive waste models and compared them to actual waste shipments. Based on this research, team members implemented system-wide improvements that reduced C4 waste by 35%. The teams also studied other chemical waste systems and identified new projects for further waste reduction.

Two Intel teams were Gold winners in the Intel Environmental Excellence Awards for their inventive solutions for chemical waste reduction in 2007. Engineers on one of the teams challenged the efficiency of our test wafer operations, and evaluated water and chemical usage, and chemical refresh rates. Their efforts resulted in an annual reduction of 6 million gallons of water and 200,000 gallons of chemicals, and a reduction of 680,000 gallons of waste. These changes not only saved resources, but resulted in cost savings of \$3 million per year.

The second team of engineers won a Gold Environmental Excellence Award for initiating a novel way to clean slurry tools, using mechanical techniques instead of chemicals. This change reduced chemical use, created a safer work environment, and saved money.

## Solid Waste

Globally, we recycled 80% of our solid waste in 2007, exceeding our corporate-wide goal of 70%. We have implemented several programs focused on sustainable practices and waste reduction, such as composting cafeteria waste; donating office furniture; and recycling metals, plastics, and other materials.

Of particular note, in 2007 we recycled 89% of the solid waste at our New Mexico site—a total of 5,351 tons of cardboard, paper, metal, plastic, wood, and other materials. Intel Oregon

### Reducing Paper Use

Under the new Notice and Access rule of the U.S. Securities and Exchange Commission (SEC), companies can for the first time use the Internet as the primary means of distributing annual reports and proxy statements. By using the Notice and Access model, we reduced our printing of SEC materials in 2007 from approximately 4.2 million to 1 million documents compared to 2006, eliminating the printing of approximately 3.2 million documents and more than 140 million pages of paper. This change also saved Intel over \$2 million in printing and postage costs, and prevented the generation of approximately 4 million pounds of CO<sub>2</sub> equivalent and over 13 million gallons of wastewater. These environmental impact estimates were made using the Environmental Defense Paper Calculator. For more information, visit the [Environmental Defense Paper Calculator](#) web site.

### Reusable Chopsticks Reduce Waste

Statistics indicate that the number of disposable chopsticks used in China each day could fill Tiananmen Square. In December 2007, Intel joined with Greenpeace China to organize a pledge to promote the use of reusable chopsticks among Intel employees, at Intel's cafeteria, and in the community. Intel employees who signed the pledge agreed not to use disposable chopsticks when dining outside the home, helping to reduce waste and thus their impact on the environment.

achieved an 87% recycling rate, gaining recognition at the Oregon state level. In addition, Intel Oregon donated 27 trailers of office furniture to local schools and nonprofit organizations, for a total "reuse" of 160 tons. At our Santa Clara site, we reused and recycled 29 tons of carpet and 330 tons of furniture. In Arizona, copper from our processes is donated to the Herberger College of the Arts at Arizona State University, to be used as a raw material for copper sculptures. To learn more about recycling at our facilities, [watch the video](#).

## Responsible Product Design



Throughout the last decade, people have become increasingly aware of how the manufacturing and use of electronics can affect the environment. As such, we strive not only to minimize the environmental impact of our operations, but also of our products at all phases in their life cycle: production, use, and ultimate disposal. The following summarizes Intel's involvement with several product ecology initiatives.

### Lead-Free Progress

Due to its electrical and mechanical properties, lead has traditionally been used in electronic components and solders. The search for replacement materials that meet performance and reliability requirements has been a significant scientific and technical challenge, but over the last decade, we have developed technologies that have allowed us to significantly reduce or eliminate lead across our product lines. Our new 45nm processors are manufactured using a lead-free process, for example, and we expect to transition our 65nm chipset products to a lead-free process in 2008. Beyond our own product portfolio, we have worked with our supply chain to develop standards for lead-free products.

### RoHS

We are compliant with the European Union Restriction of Hazardous Substances (RoHS) Directive, which sets limitations on the use of six materials, including lead. We have completed certification of RoHS-compliant materials and processes, and ship

millions of RoHS-compliant products per week. For more information on our lead-free product efforts, visit our [RoHS/Lead \(Pb\) Free Solutions](#) web site.

China is implementing a new regulation restricting the use of certain metals and other compounds in electronic products. The requirement covers the same materials as the European Union's RoHS regulation of 2006. Intel has been an industry leader in working with Chinese officials to ensure that environmental protection goals are met, while helping to alleviate unnecessary administrative burdens for electronics companies. This collaborative process has been a groundbreaking effort in China due to the involvement of stakeholders in the regulatory development process.

### Removing Halogens

While industry compliance is driven largely by government regulations, more and more, companies are voluntarily identifying ways to reduce their environmental impact. For example, legislation does not require the elimination of Halogenated Flame Retardants (HFRs) from our products, but Intel has taken proactive steps over the past few years to eliminate the use of these materials. At the 2007 Fall Intel Developer Forum, Intel President and CEO Paul Otellini announced that we will begin converting to halogen-free<sup>1</sup> packaging technology for our CPU and chipset products in 2008. We expect that most of our 45nm processors will use halogen-free packaging technology by the end of 2008.

To make high-performance CPUs halogen-free, engineers have made changes to the materials in core parts of the packaging that connect the chip to the motherboard. Developing halogen-free packaging technology has required extensive collaboration with our supply chain to ensure that our product performance and reliability goals are achieved.

<sup>1</sup> Halogen-free applies only to halogenated flame retardants and polyvinyl chloride (PVC) in components. Halogens are below 900 PPM bromine and 900 PPM chlorine.

## Innovations in Product Packaging

In 2007, we launched new protective packaging for multiple Intel product lines, with the goal of reducing packaging waste and costs. The new designs decreased packaging size, eliminated packaging components, and incorporated more recyclable materials, resulting in significant reductions in the amounts of paper and plastic materials used. The designs also improved shipping density—reducing the number of shipments required, and therefore the amount of fuel consumed and resultant emissions per unit shipped.

2007 packaging innovation highlights:

- Reduced the size and costs of packages for single motherboards while using foam cushioning that is recyclable.
- Decreased bulk-pack motherboard packaging size by an average of 16% relative to former packaging.
- Developed a universal packaging component that reduced our boxed server processor packaging size by 40%.
- Reduced mobile processor packaging size, thereby eliminating 28% of paper and 40% of plastic materials. We also reduced the number of thermoform components for mobile processor packaging from three to two.

In 2008, as we continue to minimize our packaging volume, all boxed packaging for CPUs will be reduced in size and weight. We expect these redesigns to eliminate approximately 3.5 million pounds of packaging waste annually.

## Electronic Waste

Intel's current products (mainly computing and technology components) are sold primarily to original equipment manufacturers (OEMs) and others who produce finished products. While our components are not typically subject to recycling or electronic waste (e-waste) laws, we have worked proactively with OEMs, retailers, other companies, and suppliers in the industry to identify shared solutions for used electronics. For example, we continue to support the U.S. EPA's Plug-In To eCycling campaign, which works to gather public and private support for proper recycling of used electronics. For more information, visit the [Plug-In To eCycling](#) web site.

We sponsor or host community e-waste collection events, participate in consumer awareness and e-waste collection activities, and facilitate the reuse of electronics equipment where possible. In 2007, our Arizona, Massachusetts, New Mexico, Oregon, South Carolina, and Costa Rica sites hosted or sponsored community electronics recycling events. Working in conjunction with industry, retailers, and government, we collected more than 2 million pounds of used electronics at nine events during the year. Equipment collected included TVs, monitors, CPUs, printers, keyboards, cabling, power supplies, laptops, fax machines, copiers, VCRs, and stereos. The items were sent to approved electronics recycling facilities for materials recovery or were donated to Students Recycling Used Technology (StRUT), an organization that teaches students to refurbish used computers, which are then donated to local schools.

At our own facilities, Intel's PC Services manages the recycling or reuse of electronic equipment such as laptops and desktop PCs. Functional products that can no longer be used within the company are sold or donated. Equipment that cannot be reused is processed by qualified recyclers.

## WEEE Directive

The Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union (EU) went into effect in 2006, requiring producers of certain electrical and electronic equipment to develop programs that allow consumers to return products for recycling. Each EU member state or country has implemented, or is in the process of implementing, national legislation detailing specific requirements for WEEE. Some other non-EU countries have laws similar to the WEEE Directive, but the scope and producer responsibility requirements may vary.

Most of our products—including motherboards, microprocessors, and other components—are generally not considered to be within the scope of the WEEE Directive until they are incorporated into a final product. Although the final assembly and/or configuration of our chassis-level server and telecommunications products are commonly completed by commercial customers, Intel considers these products to be within the scope of the WEEE Directive and provides recycling options for them. In some countries, our distributors manage product recycling for the items covered by the WEEE Directive.

## EPEAT

The Electronic Product Environmental Assessment Tool (EPEAT) is a rating system designed to help purchasers in the public and private sector evaluate, compare, and select desktop computers, notebooks, and monitors based on environmental attributes. Intel has been a leading participant in the development of the EPEAT system, which promotes clear and consistent criteria for product evaluation, and creates market incentives to encourage environmentally friendly design of electronics products.

The EPEAT system gained special recognition on January 24, 2007, when President George W. Bush signed Executive Order 13423 mandating U.S. federal agencies to buy EPEAT-registered products.

### Record E-waste Events



In Oregon, Intel partnered with local television station KGW to host a community e-waste event. Vehicles lined up as people dropped off about 250,000 pounds of e-waste, a record for a one-day collection event at Intel Oregon. Of this total, Intel rescued 19,238 pounds of equipment for the StRUT program in Dalles, Oregon.

In New Mexico, Intel teamed up with the City of Albuquerque and KOAT TV to offer local businesses and residents free electronic equipment recycling at a two-day event—collecting 572,619 pounds of e-waste. And, with the help of employee volunteers in Costa Rica, Intel together with a local NGO hosted a community e-waste collection event where local residents collectively dropped off 90,000 pounds of e-waste in one day.

# Performance Indicators<sup>1</sup>

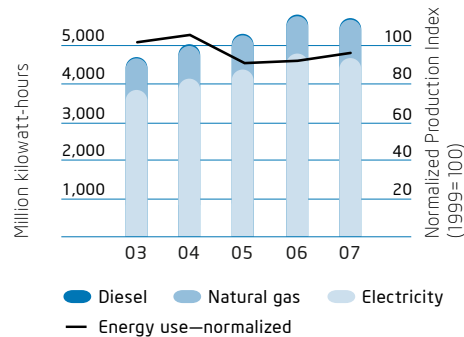
Every quarter—for more than 15 years—we have reviewed our EHS performance indicators with our senior executives. We consider these indicators critical for managing our business.

**Normalized Production Index.** The following graphs show some of the key indicators that we use to manage EHS performance. For the past several years, we have reported Intel's performance in both absolute terms and per unit of production (per chip) for most of our environmental indicators: the Normalized Production Index (NPI). The NPI is derived directly from our worldwide wafer production and is indexed to a reference or baseline year of 1999. (NPI = 100 for baseline year 1999.) With this direct correlation to Intel's global manufacturing levels, the NPI enables more accurate year-to-year comparisons and easier analysis of overall environmental performance. The index also supports trending comparisons across semiconductor manufacturers using similar normalization methods.

For more information on our formal public environmental goals, see the Corporate Profile section of this report.

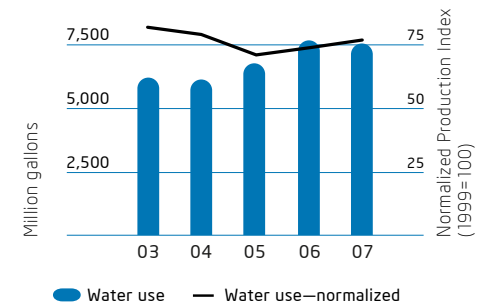
In the pages immediately following these performance indicator graphs, we have included our SARA Title III table and our inspections and compliance report.

## Energy Use



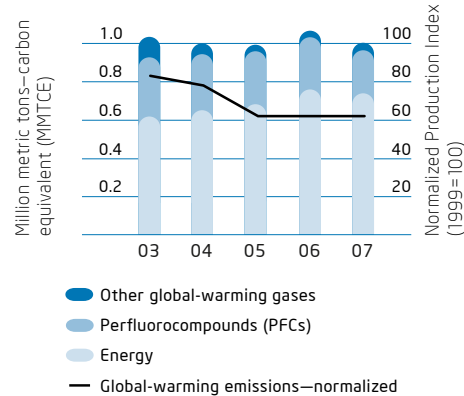
Absolute energy use decreased 2% in 2007, but normalized energy use increased 4%. Intel continues to implement energy reduction projects and remains on track to meet our goal to reduce energy consumption per chip an average of 4% per year from 2002 through 2010.

## Water Use



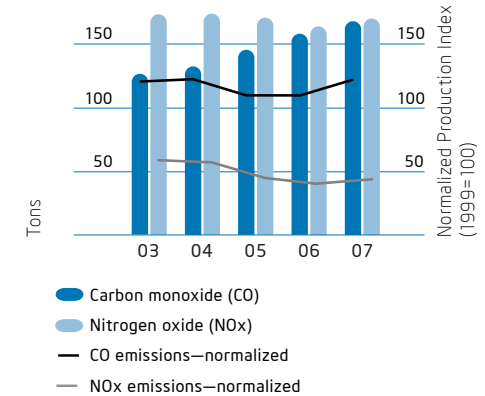
Over the past decade, Intel has invested over \$100 million in reduction, reuse, and recycling programs. In 2007, our absolute water use decreased 2% and water use per chip increased 4%. To drive improvements in this area, Intel established a team to develop a plan to further reduce water use and set a new water goal for the company.

## Global-Warming Emissions



In 2007, we reduced our absolute PFC emissions 20% and reduced normalized PFC emissions 15%. Our global-warming emissions associated with PFCs have declined for seven consecutive years. Total global-warming emissions were down 6% in 2007 but were flat normalized to production. Intel remains on track to meet our new goal to reduce global-warming emissions per chip 30% below the 2004 baseline by 2010, having already reduced normalized emissions 20% below 2004 levels through the end of 2007.

## NOx and CO Emissions



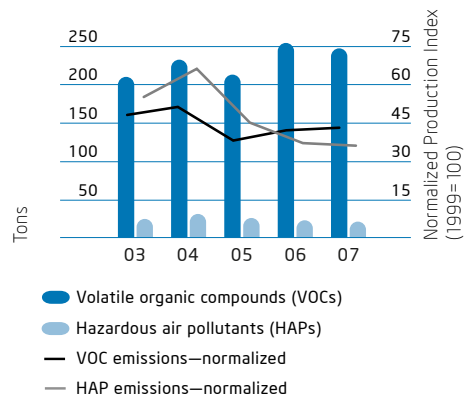
NOx and CO emissions were up in 2007, with absolute and normalized NOx emissions up 4% and 10%, respectively, and CO absolute and normalized emissions up 6% and 12%, respectively. All Intel manufacturing facilities continue to be permitted as minor sources for NOx and CO emissions, as defined by the U.S. EPA.

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<sup>1</sup> Some historical figures have been restated. The majority reflect minor changes that occur when new information is received after the close of the data collection period. The most significant change pertained to the historical data for normalized chemical waste generated; figures were recalculated after an error was discovered in the wafer start data used to calculate figures in last year's report.

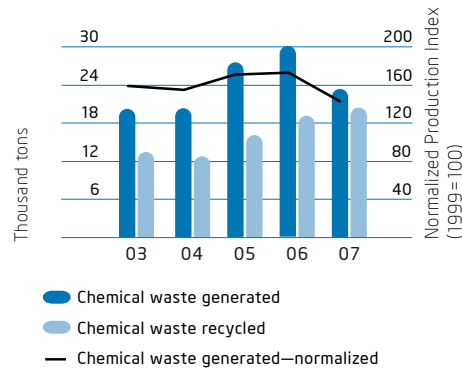
## Performance Indicators *(continued)*

### VOC and HAP Emissions



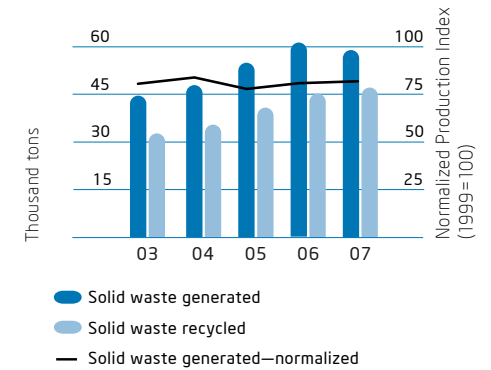
Both absolute VOC and HAP emissions decreased in 2007. VOC absolute emissions were down 3%, and HAP absolute emissions were down 9%. VOC emissions per chip increased 3%, and HAP emissions per chip were down 4%. All Intel manufacturing facilities continue to be permitted as minor sources for VOC and HAP emissions, as defined by the U.S. EPA.

### Chemical Waste Generated/Recycled



In 2007, the amount of chemical waste generated decreased by 22% in absolute terms and decreased 18% per chip. In 2007, Intel recycled 87% of the chemical waste generated at our facilities worldwide.

### Solid Waste Generated/Recycled



In 2007, the amount of solid waste generated decreased by 4% in absolute terms, but increased slightly per chip. In 2007, Intel recycled 80% of the solid waste generated at our facilities worldwide.

## SARA Title III Reportable Chemicals by Site (U.S.)

2006 Calendar Year (pounds). Reported July 2007.

	Releases to Air		Transfers Off-Site			Treatment On-Site
	Total Other On-Site Disposal or Other Releases	Total Other Off-Site Disposal or Other Releases	Quantity Used for Energy Recovery Off-Site	Quantity Recycled Off-Site	Quantity Treated Off-Site	Quantity Treated On-Site
<b>Aloha, Oregon</b>						
Ethylene glycol	10	—	—	27,361	62,514	—
N-methyl-2-pyrrolidone	223	—	—	101,778	117,273	—
<b>Total</b>	<b>233</b>	<b>0</b>	<b>0</b>	<b>129,139</b>	<b>179,787</b>	<b>0</b>
<b>Chandler, Arizona</b>						
Hydrofluoric acid	247	—	—	178	10	19,278
Lead compounds <sup>1</sup>	0	—	—	120	—	—
Nitric acid	10	—	—	20	—	18,026
N-methyl-2-pyrrolidone	3,530	—	—	10,744	300	—
<b>Total</b>	<b>3,787</b>	<b>0</b>	<b>0</b>	<b>11,062</b>	<b>310</b>	<b>37,304</b>
<b>Colorado Springs, Colorado</b>						
Ethylene glycol	31	706	56	36,247	38,462	—
Hydrogen fluoride	335	323	—	—	27	13,801
Nitrates	—	21,817	—	—	—	—
Nitric acid	80	237	—	—	27	21,827
N-methyl-2-pyrrolidone	19	305	56	16,470	68	93
<b>Total</b>	<b>465</b>	<b>23,388</b>	<b>112</b>	<b>52,717</b>	<b>38,584</b>	<b>35,721</b>
<b>Hawthorne Farms, Oregon</b>						
No reportable amounts	—	—	—	—	—	—
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Hudson, Massachusetts</b>						
Ammonia	6,160	806	4	15	9,812	—
Copper compounds	—	791	—	34,051	—	—
Ethylene glycol	—	2,020	44	82,369	117,549	4
Hydrofluoric acid	—	—	—	—	—	—

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SARA Title III Reportable Chemicals by Site (U.S.) (continued)

	Releases to Air		Transfers Off-Site			Treatment On-Site
	Total Other On-Site Disposal or Other Releases	Total Other Off-Site Disposal or Other Releases	Quantity Used for Energy Recovery Off-Site	Quantity Recycled Off-Site	Quantity Treated Off-Site	Quantity Treated On-Site
<b>Hudson, Massachusetts (continued)</b>						
Lead compounds <sup>1</sup>	—	93	—	1,063	—	—
Methanol	—	—	—	—	—	—
Nitrates	—	—	—	—	—	—
Nitric acid	1	103	41	—	—	10,148
N-methyl-2-pyrrolidone	678	1,025	44	94,862	6,743	537
<b>Total</b>	<b>6,839</b>	<b>4,838</b>	<b>133</b>	<b>212,360</b>	<b>134,104</b>	<b>10,689</b>
<b>Ocotillo, Arizona</b>						
Ammonia	11,576	49	2,012	12,939	12,894	—
Copper compounds	—	199	—	58,207	—	—
Ethylene glycol	20	1,519	1,626	—	93,935	—
Hydrofluoric acid	762	3	—	1,885	—	180,716
Lead compounds <sup>1</sup>	—	—	—	1,629	—	—
Methanol	—	—	—	—	—	—
Nitrates	—	—	—	—	63,672	—
Nitric acid	641	62	—	449	5,243	64,699
N-methyl-2-pyrrolidone	34	380	82,290	28,220	283	—
<b>Total</b>	<b>13,033</b>	<b>2,212</b>	<b>85,928</b>	<b>103,329</b>	<b>176,027</b>	<b>245,415</b>
<b>Rio Rancho, New Mexico</b>						
Ammonia	19,121	423	92	123	34,917	—
Chlorine	2,526	109	—	—	—	2,848
Copper compounds	—	620	—	37,926	—	—
Ethylene glycol	395	1,360	432	83,819	53,719	—
Hydrofluoric acid	3,470	1	—	2,944	12	298,543
Lead compounds <sup>1</sup>	—	18	—	1,164	—	—
Methanol	2,509	389	96	14,551	27	16,968

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**SARA Title III Reportable Chemicals by Site (U.S.) (continued)**

	Releases to Air		Transfers Off-Site			Treatment On-Site
	Total Other On-Site Disposal or Other Releases	Total Other Off-Site Disposal or Other Releases	Quantity Used for Energy Recovery Off-Site	Quantity Recycled Off-Site	Quantity Treated Off-Site	Quantity Treated On-Site
<b>Rio Rancho, New Mexico (continued)</b>						
Nitrates	—	—	—	—	47,789	—
Nitric acid	2,646	45	—	472	—	48,565
N-methyl-2-pyrrolidone	139	1,122	—	283,409	11,506	903
<b>Total</b>	<b>30,806</b>	<b>4,087</b>	<b>620</b>	<b>424,408</b>	<b>147,970</b>	<b>367,827</b>
<b>Ronler Acres, Oregon</b>						
Ammonia	2,140	—	—	114,842	228,490	—
Certain glycol ethers	10	—	—	31,364	13,629	—
Copper compounds	10	582	—	27,017	—	—
Ethylene glycol	10	—	—	95,080	111,199	—
Hydrofluoric acid	1,010	—	—	15,926	5	426,298
Lead compounds <sup>1</sup>	—	4	—	975	—	—
Methanol	3,767	—	—	8,772	—	3,185
Nitrates	—	—	—	—	79,851	—
Nitric acid	3,201	—	—	2,182	10	76,633
N-methyl-2-pyrrolidone	82	—	—	256,124	9,805	2,578
<b>Total</b>	<b>10,230</b>	<b>586</b>	<b>0</b>	<b>552,282</b>	<b>442,989</b>	<b>508,694</b>
<b>Santa Clara, California</b>						
Ammonia	4,137	—	99	—	7,057	—
Copper compounds	—	12	—	13,317	—	—
Ethylene glycol	2	—	99	45,705	10,958	—
Hydrofluoric acid	247	—	—	—	292	32,087
Lead compounds <sup>1</sup>	—	6	—	75	—	—
Nitrates	—	—	—	—	22,134	—
Nitric acid	92	—	—	—	282	22,487
N-methyl-2-pyrrolidone	38	—	2,992	84,049	—	444
<b>Total</b>	<b>4,516</b>	<b>18</b>	<b>3,190</b>	<b>143,146</b>	<b>40,723</b>	<b>55,018</b>

<sup>1</sup> Lead releases equal air emissions plus publicly owned treatment works (POTW) discharges, due to U.S. EPA requirements that metals sent to POTW be recorded as releases.

## Inspections and Compliance 2007

Collectively, Intel's facilities around the world average more than 90 inspections a year by various environmental and safety regulatory agencies. The following is a list of non-compliance issues recorded in 2007.

Location	Type	Violation	Fine	Intel's Corrective Action
<b>Asia-Pacific</b>				
Malaysia	Environmental	The Penang Department of Environment (DOE) issued a Notice of Violation (NOV) for non-conformances cited during unannounced site inspections to Intel Penang. The NOV was related to scheduled waste labeling/notification and approval for emission stacks.	\$800 fine	A new waste label was used and the stack emission approval was resubmitted to the DOE.
China	Safety	The local Fire Department issued a non-compliance regarding windows that could not be opened on the stairway, and the fire system monitoring personnel (security contractor) did not receive the required training and did not have a proper license.	No fines or penalties	A letter was submitted to the Fire Department stating that the identified windows are functional and the fire system monitoring personnel were trained.
<b>Europe, Middle East, Africa</b>				
Ireland	Environmental	A notice of non-compliance was issued regarding a secondary containment inspection that was not completed within the specified period.	No fines or penalties	A report was submitted to the EPA stating that repairs to the identified secondary containments would be completed and that the hydrofluoric acid secondary containment would also be inspected. The following year's Annual Environmental Report, submitted to the EPA in March 2005, confirmed completion of the repairs, but there was no reference to the hydrofluoric acid secondary containment inspection. Although internal checks were completed within the stated time frame, the inspection by the external engineer was not completed; thus, a Notice of Non-compliance was issued.
The Netherlands	Safety	Residential neighbors filed a noise complaint with the local municipality.	No fines or penalties assessed to date	We have submitted a third-party acoustic report to the municipality and are awaiting their response.
<b>United States</b>				
New Mexico	Environmental	The U.S. EPA and the New Mexico Environment Department (NMED) issued an NOV for our administrative error on a Land Disposal Restrictions (LDR) form.	No fines or penalties	Intel corrected the LDR form and submitted a copy to NMED. The NMED stated that no further action was required. EPA Region 6 has not completed their inspection report for the joint inspection.
Washington	Environmental	The Department of Ecology issued an NOV for an improper Washington State waste code determination, and a waste container was not closed properly.	No fines or penalties	The Washington waste code was added to the waste determination documentation. The waste container was closed.