

## Environmental, Safety and Health



# Message from the President & CEO

TI is known for its high standards and tough goals. When it comes to environmental stewardship and the continued safety and health of our employees and surrounding communities, our goals are just as stringent. We have worked hard through the years to establish a culture that reinforces individual and team accountability regarding our long-term environmental and safety objectives of zero wasted resources, zero injuries and zero illnesses.

In 2004, TI made significant progress toward these goals. For example, the company was recognized as having the lowest occupational injury and illness rate among U.S. semiconductor companies. Other details highlighting TI's achievements are included in this report.

I am proud of this company's commitment to the well-being of its employees and surrounding communities. Our comprehensive Environmental, Safety and Health program is a critical element of TI's strategy to be a trusted supplier, employer, community member and investment. It also helps TI compete more effectively in the global semiconductor market. I want to assure you that the people of TI are committed to continued improvement of our strong environmental stewardship and safety programs in the years ahead.



A handwritten signature in black ink, appearing to read 'Rich Templeton'. The signature is stylized and fluid, with a large initial 'R' and 'T'.

**Richard (Rich) K. Templeton**  
President and Chief Executive Officer

# TI Awards - 2004

## **Twelve Years Zero Lost Time Award**

Shizuoka Labor Standards Bureau  
TI Japan, Oyama, Japan  
For 12 years with a zero lost time/injury rate

## **Excellent Environmental Company Prize**

County Governor  
TI Korea, Chinchon, Korea  
For environmental excellence

## **Prime Minister's Hibiscus Award**

Ministry of Science, Technology and the Environment  
TI Malaysia, Kuala Lumpur, Malaysia  
For environmental excellence

## **Green Factory Re-Certification Award**

PROFEPA Mexican Federal Environmental Authorities  
TI Mexico, Aguascalientes, Mexico

## **PEZA Environmental Performance Award**

Philippines Economic Zone Authority  
TI Philippines, Baguio, Philippines  
For performance in sustaining compliance and innovative systems, and continued improvement in environmental protection

## **Special Citation Award**

Pollution Control Association of the Philippines  
TI Philippines, Baguio, Philippines  
For the company's dedication and success in implementing an exemplary environmental management program

## **Top Ten Pollution Control Officers**

Pollution Control Association of the Philippines  
TI Philippines, Baguio, Philippines

## **Gawad Kaligtasan at Kaunlaran Recognition**

Occupational Health & Safety Center  
TI Philippines, Baguio, Philippines

## **Certificate of Achievement**

Pima Association of Governments  
TI Tucson, Tucson, Arizona, USA  
For exceeding travel reduction program goals in alternate mode usage and employee survey participation

## **National Environmental Performance Track Outreach Award**

United States Environmental Protection Agency  
TI Attleboro, Attleboro Massachusetts, USA  
For making special efforts to inform employees and external groups about the benefits of membership in the U.S. EPA's National Environmental Performance Track

## **Toxics Use Reduction Leadership Award**

Massachusetts Toxics Use Reduction Institute  
TI Attleboro, Attleboro, Massachusetts, USA

## **Massachusetts Safety Council Group Safety Award**

Massachusetts Safety Council  
Sensors and Controls Products Business,  
Sensors and Controls Automotive Business Unit  
TI Attleboro, Attleboro, Massachusetts, USA  
For achieving a lost/restricted day case rate better than the industry average

## **Best Workplaces for Commuters**

U.S. Environmental Protection Agency  
TI Dallas, Dallas, Texas, USA  
For providing employees with outstanding commuter benefits which meet the National Standard of Excellence and help reduce traffic and air pollution in the community

## **TI ESH Excellence Awards - 2005**

The ESH Excellence Awards are presented annually to the TI sites that best demonstrate an outstanding commitment to compliance, integration of ESH principles, continuous improvement and world-class performance. The winning sites possess a workforce culture dedicated to ESH excellence and their performance reflects these values.

### **Gold**

- Aguascalientes, Mexico
- DMOS6, Dallas, Texas, USA

### **Silver**

- Baguio, Philippines
- DMOS5, Dallas, Texas, USA
- Hiji, Japan
- Kilby, Dallas, Texas, USA
- Miho, Japan
- Taipei, Taiwan

## **Perfect Record Award**

National Safety Council  
TI Dallas, DMOS6, Dallas, Texas, USA  
For achieving a one-year milestone on April 10, 2004 with over 1.25 million hours worked without a work-related lost-time injury

## **Perfect Record Award**

National Safety Council  
TI Lewisville, Lewisville Data Center, Lewisville, Texas, USA  
For achieving an 11-year milestone on October 18, 2004 with over 675,000 hours worked without a work-related lost-time injury

## **Beautification Award**

City of Stafford  
TI Houston, Stafford, Texas, USA

## **Green Cross for Safety Excellence Achievement Award**

National Safety Council  
TI U.S. Sites, USA  
For outstanding efforts in occupational safety performance

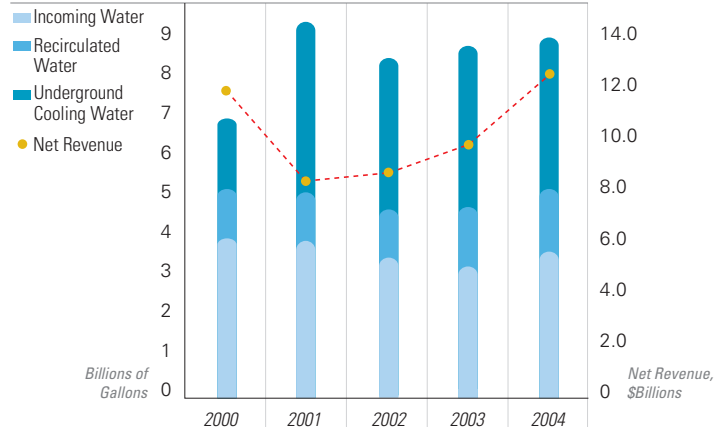
## **Sony Green Partner**

Sony Corporation  
Texas Instruments Semiconductor Group:  
Freising, Germany  
Hiji, Japan  
Miho, Japan  
Kuala Lumpur, Malaysia  
Aguascalientes, Mexico  
Baguio, Philippines  
Taipei, Taiwan  
Dallas, Texas, USA  
Houston, Texas, USA  
Sherman, Texas, USA  
For supplying components, devices and materials to ensure the production of environmentally friendly products

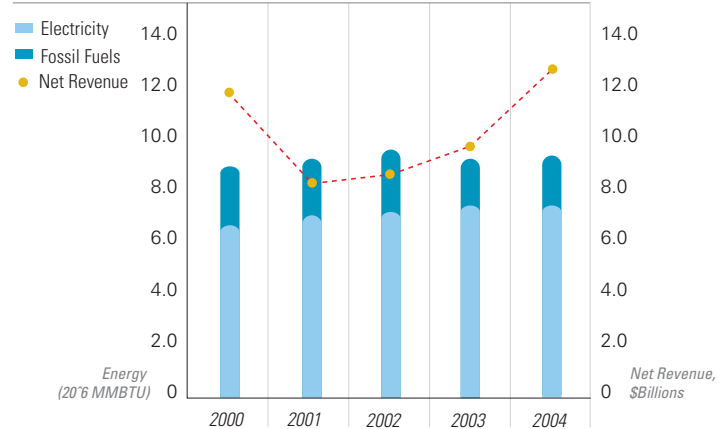
*During recent years, numerous divestitures and acquisitions have changed the face of our business and of our ESH performance metrics. As our company focuses on the digital signal processing, analog and mixed-signal solutions markets, we have greatly increased our manufacturing operations, particularly in the United States.*

*These dynamic operational changes make it difficult to compare our performance from year to year, but we believe there is value in tracking our trends. You'll see we have provided five years of data throughout this report, a reflection of our continued innovative efforts to operate safely and sustainably at all of our facilities worldwide.*

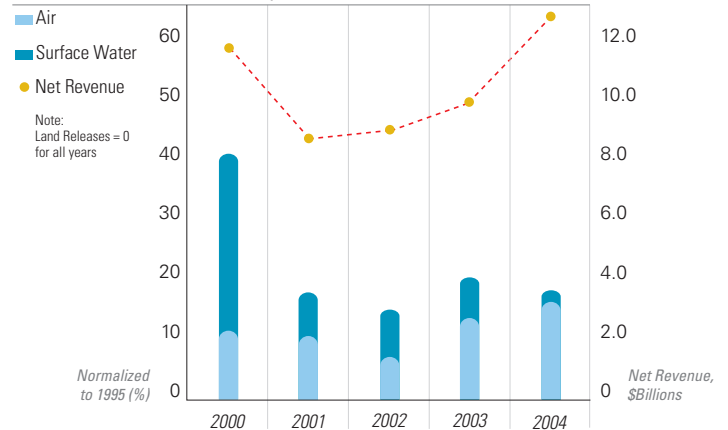
**Total TI Water Use**



**Total Energy Use**



**Permitted Releases to Air, Land & Water** EPA TRI Chemicals (US Only)



1930

1930 Founded as "Geophysical Service"

1946 Established Lab & Manufacturing Division

1940

1951 Name changed to Texas Instruments Incorporated (TI)

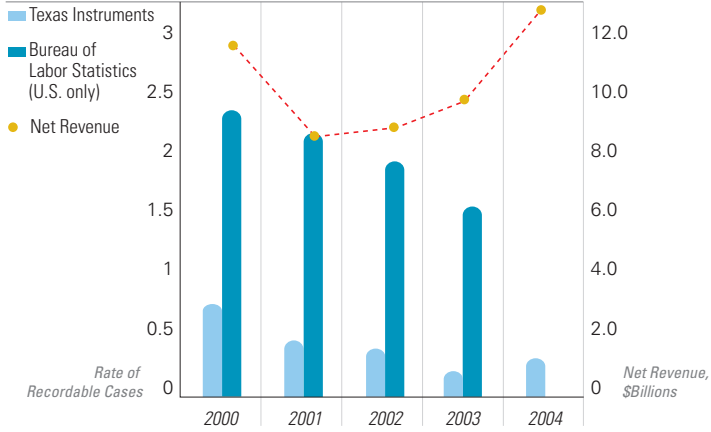
1950

1954 First commercial silicon transistor

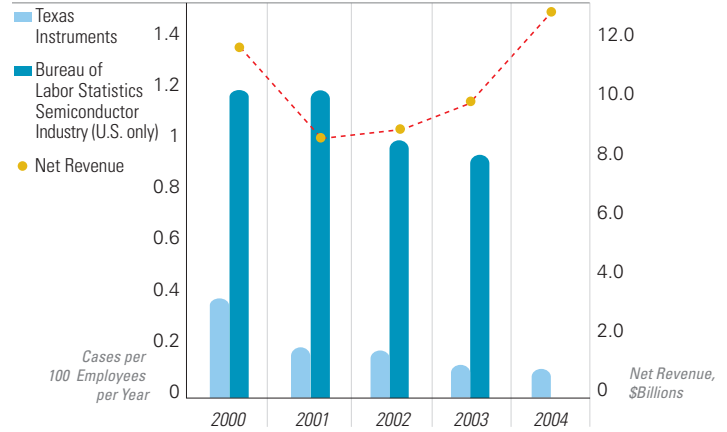
1958 First integrated circuit (IC) by Jack Kilby



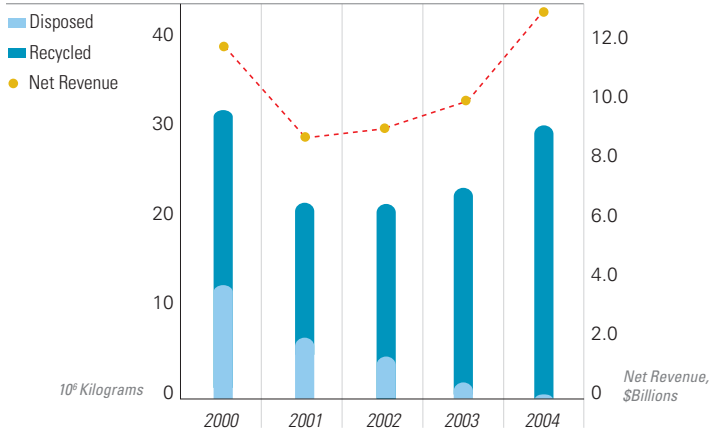
### Recordable Cases



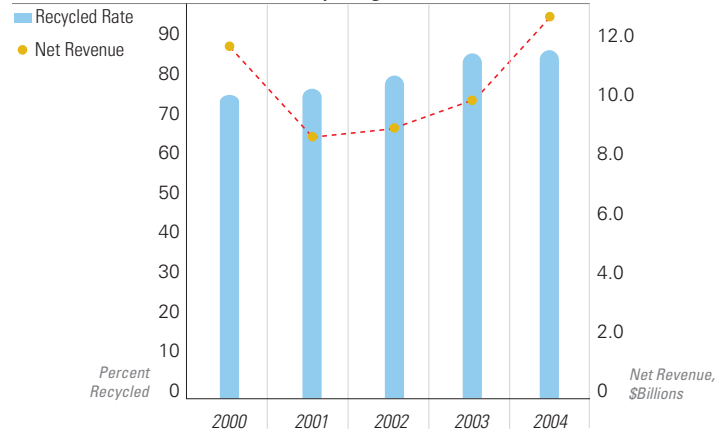
### Lost/Restricted Day Cases



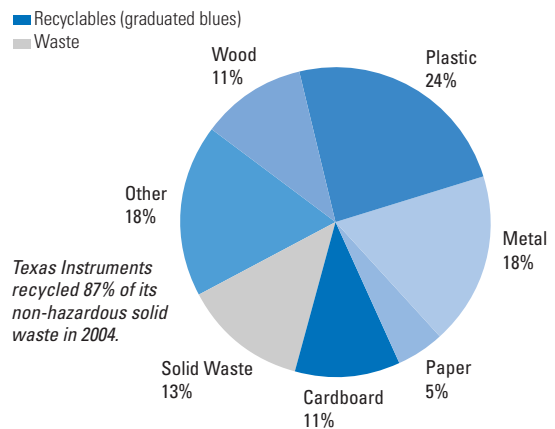
### Worldwide Hazardous Waste



### Non-Hazardous Materials Recycling Rate



### Non-Hazardous Solid Waste and Recyclables



**1961** First TI ethics booklet published

**1967** Invented electronic handheld calculator

**1969** Apollo mission landed with aid of TI products



**1970**



**1970s** First environmental standards adopted

**1970s** First safety standards adopted

**1973** Established energy management program

**1982** Introduced single-chip digital signal processor

**1984** Launched Worldwide ESH Audit Program

**1989** TI Malaysia received Malaysia Award for Excellence in Manufacturing

**1989** Introduced first lead-free alternative to IC market

**1980**



# TI Drives to be Pb-Free and Green

Environmental stewardship is at priority at Texas Instruments. We work hard to assure safe operations that minimize impact to the air, water and land in the communities in which we live and operate. Due to the increasing need for environmentally-friendly electronic components and systems and related legislation banning the use of certain materials, TI has taken the initiative to reduce its use of hazardous substances and has been an industry leader in providing lead (Pb)-free and "green" products.

TI began its conversion to Pb-free well ahead of the curve—in the late 1980s—and announced one of the world's first lead-free semiconductor component finishes. This was in advance of the European Union's 2003 Restriction on Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive banning the use of hazardous materials. RoHS, among other similar EU directives, was enacted to decrease the use and environmental impact of lead and other hazardous materials.

Although the amount of lead the semiconductor industry used was relatively small, TI took a major step ahead of its competitors by developing and introducing a nickel-palladium finish for leadframe packages. The finish was converted to nickel-palladium-gold in 2000. For ball array packages, TI developed lead-free options using industry-standard tin-silver-copper balls.

"TI has long set aggressive goals aimed at reducing any environmental impact from our products and operations," said Brenda Harrison, Worldwide Environmental, Safety & Health Director. "Moving toward lead-free products early on just made sense."

In addition to the substances restricted by RoHS, TI addresses additional materials of concern through its "Green" mold compound initiative. TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine and Antimony based flame retardants.

TI actively monitors environmental legislation and aligns with regulatory requirements as well as the needs of our customers. This enables TI to prepare for future regulations and meet customers' needs more quickly. For example, before RoHS was adopted, TI recognized that customers

would require early availability and put an aggressive Pb-free conversion schedule in place. In anticipation of the directive, TI altered manufacturing materials and flows for most of the semiconductor products it offers. In addition, TI established an Eco-Friendly Program Office dedicated to supporting customers during the transition.

One of the many tools TI provides for customers seeking green solutions is a web site ([www.ti.com/productcontent](http://www.ti.com/productcontent)), which allows interested parties to enter a part number that has been registered with TI and obtain the product's complete material content, current production status, moisture sensitivity level, qualified reflow temperature, terminal finish and current status of Pb-Free or "Green."

The company has already converted a large percentage of its entire semiconductor product line to Pb-Free solutions, and will continue to drive aggressive schedules for Pb-Free conversions to support customers' needs in preparation for the RoHS's effective date of July 1, 2006.



*Texas Instruments (TI) is an industry leader in the movement toward Lead (Pb)-Free. TI defines "Lead (Pb)-Free" or "Pb-Free" to mean semiconductor products that are compatible with the current RoHS requirements for all six substances, including the requirements that lead not exceed 0.1% by weight in homogeneous material. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.*

- 1990** Initiated NHSW recycling worldwide
- 1990** TI Ergonomics Program established
- 1991** Management-driven safety policies established



- 1992** TI-Freising ammonia recycling program established
- 1993** ODSs eliminated in operations
- 1996** TI ESH Policies & Principles adopted
- 1996** TI-Freising became the company's first site to obtain ISO 14001 and EMAS certification
- 1997** Announced biological sensor technology
- 1997** TI-Dallas received Texas Governor's Award for Environmental Excellence

1990

# At TI, Safety Rates and Management Commitment go Hand-in-Hand

At TI, employees are our greatest asset, so it's second nature for TI management to view safety as a partnership and be involved extensively. It was this commitment, from the top down, that helped raise the bar in safety for both TI and the semiconductor industry in 2004. Management's support of TI's ergonomics program also resulted in better safety rates and a more comfortable working environment for all.

In 2001, safety was established as a worldwide priority in an effort to align TI's business goals and ensure all teams were working effectively toward the outcome. As a business metric, management and employee accountability and safety performance were tracked on the business score card, thus highlighting the progress of the safety program and potential need for modifications. TI Environmental, Safety and Health (ESH) and Manufacturing management at the site and corporate levels meet regularly to stay up to date on ESH performance and programs.

Visible leader or management involvement makes the difference at every location. For example, TI-Mexico site management meets with the manufacturing population on a weekly basis to review safety performance and define actions for improvement. In Hiji, Japan TI's plant manager regularly reviews individual safety progress. Safety is also a strong message in quarterly department meetings worldwide such as the ones regularly held at The Kilby Center in Dallas, Texas. Because of management's strong commitment to safety, several TI sites attained a safety rate of zero lost/restricted day cases at 20 sites worldwide in 2004, including Baguio, Philippines, Campinas, Brazil, DMOS 5 and 6 in Dallas, Texas, Hiji and Miho Japan, San Jose, California, Tucson, Arizona and Warrentville, Illinois.

TI's ergonomics program, with the strong support of TI site management and its philosophy that "a comfortable workstation is a great tool to achieve the highest level of productivity and quality," has also proved to have a big impact on reducing workplace injury and illness.

In 1999, an analysis of on-the-job injuries found that 38 percent of TI's lost/restricted day case rate was related to ergonomics issues such as neck, back and wrist injuries. ESH staff knew that this rate could be drastically reduced by increasing the scope of the ergonomics program and making sure the work environment fit the employee instead of trying to fit the employee to the job. In response, TI management initiated a well-funded comprehensive program that spanned over several years. This approach made good business sense. TI worked with suppliers to design ergonomically friendly equipment and retrofitted existing equipment and TI's ergonomics team focused on making the lowest-cost solutions deliver big results. This resulted in a 98 percent drop in ergonomics related injuries since 1999.

TI's commitment to safety as a partnership has improved its lost/restricted day case rate by more than 85 percent over the last 10 years. TI's rate is well below industry average and TI is believed to hold the best safety rating in the Semiconductor Industry Association. The key to success was simple: TI leadership's commitment to safety excellence!



*Employees at all job levels are held accountable for compliance with environmental, safety and health (ESH) requirements and achievement of continual improvement objectives and targets appropriate to their function. TI provides equivalent environmental, health and safety protection to our workers and the communities in which we operate around the world, embraces responsibility for the outcomes of our operations and is accountable for appropriate responses.*

- 1998** Wafer recycling program established: Recycled wafers converted to solar panels reduce energy consumption
- 1998** Continued acquisitions to strengthen the company's DSP, analog and end-equipment portfolios
- 1999** Sulfuric Acid Reuse Program established
- 1999** Acquisition activity accelerated to strengthen semiconductor leadership



- 2000** Jack Kilby awarded the Nobel Prize
- 2000** Company record low for L/RDC Rate\* – 0.34
- 2001** TI announced agreement to not use products made from old growth wood
- 2003** TI launched U.S. mobile phone re-use program
- 2004** Achieved company record low L/RDC Rate for fifth consecutive year. 2004 L/RDC Rate – 0.09

# 2000

\*Lost/restricted day case rates (L/RDC) – metric that tracks recordable injuries resulting in days away from work, restriction of work or motion, temporary assignment to "light" duty or temporary part-time work.

# Environmental Management Systems

TI operates a management system at its manufacturing operations that is equivalent or certified to ISO 14001. All TI sites operate under strict adherence to the company's corporate environmental, safety and health (ESH) policy and principles, which set an aggressive standard for ESH performance.

## ISO 14001 Certification Status:

### Semiconductor Business Group



#### **Aguascalientes, Mexico**

- Certification: 7 October, 2005. CERT-57-07598



#### **Baguio, Philippines**

- Certification: 10 December, 2004.  
CERT-06513-2004-AE-HOU-RAB, Rev. 1



#### **Dallas, TX, USA**

- Operates under TI's management system



#### **Hiji, Japan**

- Certification: 10 December, 2004.  
CERT-06513-2004-AE-HOU-RAB, Rev. 1



#### **Kuala Lumpur, Malaysia**

- Certification: 10 December, 2004.  
CERT-06513-2004-AE-HOU-RAB, Rev. 1  
*For design, manufacture and marketing of integrated circuits.*



#### **Taipei, Taiwan**

- Certification: 10 December, 2004.  
CERT-06513-2004-AE-HOU-RAB, Rev. 1



#### **Freising, Germany**

- Certification: 29 November, 1999. UGA 025-2002



#### **Houston, TX, USA**

- Operates under TI's management system



#### **Miho, Japan**

- Certification: 10 December, 2004.  
CERT-06513-2004-AE-HOU-RAB, Rev. 1



#### **Sherman, TX, USA**

- Operates under TI's management system



#### **Tucson, AZ, USA**

- Initial certification: 2000. CERT-950 99 0473
- No current certification – Operates under TI's management system

### Sensors & Controls Business Group



#### **Aguascalientes, Mexico**

- Certification: 10 October, 2001. 74 300 9897



#### **Almelo, The Netherlands**

- Certification: 1 July, 2002. CERT-2010855



#### **Attleboro, Massachusetts, USA**

- Certification: 15 November, 2002. CERT-113099



#### **Baoying, China**

- Certification: 1 February, 2001. CERT-104 000634



#### **Campinas, Brazil**

- Certification: 24 October, 2003.  
CERT-139807, ANSI RAB EMS Accreditation



#### **Chinchon, Korea**

- Certification: 5 October, 2000.  
CERT-EAC-02438



#### **Kuala Lumpur, Malaysia**

- Certification: 10 December, 2004.  
CERT-07559-2004-AE-HOU-RAB  
*For processes associated with the manufacturing of semiconductor devices.*



#### **Oyama, Japan**

- Certification: 14 December, 2004.  
CERT-07556-2004-AE-HOU-RAB