TURA 20th Anniversary Leaders Reduce Toxic Chemical Use by 3 Million Pounds

Facility Tours Demonstrate Environmental Accomplishments of Massachusetts Companies
Ahead of its time 20 years ago with the passage of the Toxics Use Reduction Act (TURA), Massachusetts continues to lead the nation in reducing use, waste and emissions of toxic chemicals. To recognize these accomplishments, state dignitaries and environmental agencies visited Massachusetts companies to present the “TURA 20th Anniversary Leaders” award for outstanding environmental achievements.

**Allegro MicroSystems**
**Worcester, MA**

- Reduced usage of targeted chemicals by 61 percent annually.
- Reduced byproduct generated for reported chemicals by 64 percent and emissions by 88 percent.
- Reduced water use by 65 percent, or 94 million gallons a year, between 1996 and 2009.
- Reduced oil/natural gas consumption by 14 percent and electricity by 21 percent.

“This is a special recognition for us because our Toxics Use Reduction team works hard to achieve these results. Our active Toxics Use Reduction and resource conservation program at our headquarters facility in Worcester has been a contributing factor of our competitiveness in the industry.”

Don Alger
Senior Environmental Engineer

![Plant Maintenance Manager (DP) Gus Speight shows Allegro MicroSystems, Inc. dual bed ion exchange equipment, which is part of the high purity water manufacturing system.](image-url)
**Analog Devices**

**Wilmington, MA**

By evaluating safer options and processes, the company has managed to either eliminate or significantly reduce hazardous chemicals used in manufacturing, resulting in use levels below reporting thresholds.

“Because of the TURA framework, we are in a better position to meet customers’ needs for green products. Our TURA plan wasn’t something we wrote, put on a shelf and then updated in two years. This work is embedded into our management system and measured. This TURA award validates Analog Devices’ long-term commitment to the environment and public health.”

Beth Tshudy
Environmental, Health and Safety Manager

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**A.W. Chesterton Company**

**Groveland, MA**

- Eliminated 12 tons of chlorinated solvent waste that saved over $113,000 by switching to water-based cleaners.
- Reduced overall regulated waste by 40 percent, a direct savings of $47,000 by using more efficient and safer materials or reformulations.

“Because of the nature of our products, sealing devices that help customers prevent chemical leaks, we’ve always been conscious of the environment and open to new ways of doing business. It’s been very helpful for us to have a list of chemicals of concern identified by TURA in Mass. as well as the U.S. Environmental Protection Agency to help us prioritize our improvements.”

Linda Loreth
Director of Environmental, Health and Safety

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**Cobham Sensor Systems**

**Lowell, MA**

- Reduced lead consumption by 84 percent, transitioning to lead-free electronics manufacturing.
- Lends expertise to the New England Lead-Free Consortium, an organization that advances research into environmentally sound alternatives.
- Assessing the safety and effectiveness of trivalent chromium plating as an alternative to hexavalent chromium.

“Protecting the health of our employees and the environment has always been a priority for us. In fact, as a leading technology provider to the defense industry, building trust and protecting lives is part of our DNA. Our commitment to the individual communities in which we work is one of the reasons we’re successful as a global organization.”

Bob Canedo
Manager of Safety, Health and Environment

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Ina Moskowitz and Beth Tshudy, both of Analog Devices, with State Rep. James Miceli.

Andrew Chesterton, Executive Vice President; Linda Loreth, Director of Environmental, Health & Safety; Brendan O. McGonigle, District Director, Commonwealth of Massachusetts, Office of Representative Harriet L. Stanley; Brian O’Donnell, President & Chief Executive Officer.

Greg Morose of the Toxics Use Reduction Institute, Dick Anderson of Cobham Sensor Systems and State Senator Steven Panagiotakos.
Gentex Optics
Dudley, MA

- Reduced solvents used in the coating process by 87 percent.
- Reduced emissions up to 90 percent by using bio-filtration for the control and destruction of volatile organic compounds (VOCs).
- Reduced water use by 4.5 million gallons per year, or 34 percent.

“Gentex Optics is honored to receive such a prestigious recognition for our efforts in leadership and corporate responsibility for protecting the environment in which we live and work. We appreciate the opportunities to learn and share through the support and activities of TURI. The state of Massachusetts is fortunate to have such an organization that provides the tools and resources to help local businesses reduce the use of toxic chemicals in an economical way.”

Bill Van Wieren
Gentex Dudley Plant Manager

L & J of New England
Worcester, MA

- Improved employee safety and increased profitability by using less hazardous chemicals for more than 15 years.
- Replaced the solvent ethylene glycol monobutyl with a safer chemical, reducing the use of volatile organic compounds (VOCs) by 20,000 lbs. at a savings of $23,000.
- Saving $10,000 annually in water use by implementing filtration and flow-control systems.

“We’re a small company and don’t have a lot of resources to do this work. So when the state government says they are here to help, we very much appreciate it because we want to do the right thing. The Office of Technical Assistance has helped us find safer chemicals and change some of our processes as well as stay ahead of the regulatory and penalizing agencies. Without a doubt, these activities have played a major role in keeping us in business.”

Duncan Leith
Owner and President

M.D. Stetson
Randolph, MA

- Reduced use of glycol ethers from 176,000 to 75,000 lbs. and expects to eliminate the use of the solvents within the next few years.
- Works with the TURI Laboratory to test the performance of its green cleaning formulations.
- Has been supplying public schools, universities and municipalities with green cleaning solutions for more than 15 years.

“I am honored to accept this award and recognition on behalf of my employees and customers. I’ve always been proud of our company for doing what’s right and manufacturing and selling our products here in Massachusetts. Eighty percent of American jobs are with small businesses like ours.”

Michael Glass, President
Mersen (formerly Ferraz Shawmut) Newburyport, MA

- Eliminated the use of 35,000 pounds per year of trichloroethylene (TCE), a hazardous solvent subject to increasing regulatory requirements, by replacing it with a water-based cleaning solution.
- Reduced lead used in solder from over 2,000 pounds per year to less than 500 pounds per year, and reduced lead use in brass from 70,000 to 25,000 pounds per year.

“It has been very beneficial to our company over many years to tap the extensive knowledge of the experts at the Office of Technical Assistance. Companies have come a long way from the days when profits and environmental stewardship were thought of as opposing forces. We are proof that what's good for the environment, can most definitely be good for the bottom line.”

Richard Robbins,
Facilities and Environmental Health and Safety Manager

Millipore Corporation Bedford, MA

- Reduced the amount of solvents used in its operations by up to 80 percent.
- Implemented solvent recovery systems early in the 1990s, and initiated innovative process design changes aimed at further reducing the use of a variety of chemicals as part of its toxics use reduction process.
- Currently implementing a “Design for Sustainability” program that assesses the company's impacts on the environment and on human health from the initial stages of product development.

“We are honored by this award, which acknowledges our commitment to the environment that is truly ingrained throughout our company. Our vision is to make Millipore the leader in developing sustainable solutions for the life sciences industry. That means looking at the materials that go into our products, how our products are packaged and even how they impact the environment at our customers’ locations.”

David Newman
Senior Director for Global Sustainability

The data show that the TURA 20th Anniversary Leaders thrived between 1990 and 2008 – they reported an increase in production of seven-fold — while reducing their use of toxic chemicals by an incredible 3 million pounds.
PerkinElmer
Salem, MA

- Reduced the use of reportable solvents by 90 percent.
- Reduced chemical, energy and water usage, and increased production, while continuing to meet the strict quality requirements of its medical/industrial devices and military customers.
- Incorporated toxics use reduction strategies into its EMS to monitor and control heating and cooling which resulted in a 50 percent reduction in electrical demand and 80 percent reduction in water usage.

“By reevaluating our cleaning operations and employing classic toxics use reduction analyses, we have been able to significantly reduce our use of acids and other cleaning chemicals. We are now looking to switch even more of our product lines to the citrus-based cleaning technology used in one of our key military applications. Our core toxics use reduction planning and energy management system (EMS) group drives innovations at this facility.”

Susan Lynn Marallo
Environmental Health and Safety, and Facilities Manager

Philips Lightolier
Fall River, MA

- Eliminated the use of approximately 1.25 million pounds of trichloroethylene.
- Eliminated more than 4 million pounds of air emissions, with savings of more than $2 million.
- Reduced water usage by 78%, saving 70 million gallons per year.

“By reevaluating our cleaning operations and employing classic toxics use reduction analyses, we have been able to significantly reduce our use of acids and other cleaning chemicals. We are now looking to switch even more of our product lines to the citrus-based cleaning technology used in one of our key military applications. Our core toxics use reduction planning and energy management system (EMS) group drives innovations at this facility.”

Susan Lynn Marallo
Environmental Health and Safety, and Facilities Manager

Raytheon Company
Andover and Waltham, MA

- Concentrated efforts to eliminate ozone-depleting solvents, lead, cadmium and hexavalent chromium.
- Work to reduce greenhouse gas emissions resulted in 275,000 metric tons of GHG emissions avoided between 2002 and 2008 – achieved a year ahead of a self-imposed 2009 EPA Climate Leaders goal.
- Set a new EPA Climate Leaders goal of an absolute 10% reduction of GHG emissions by 2015.

“Our work with the TURA program was the catalyst for integrating Toxics Use Reduction into all of our business operations. Doing what is right for the environment – and therefore right for our company, employees and the community – is now standard business practice.”

Frank Marino
Senior Manager of Corporate Environmental, Health and Safety at Raytheon

“..."We’ve implemented Toxics Use Reduction projects over the years that have literally saved us millions of dollars in operating costs. The return on investment, as well as the benefits to the environment, have been very favorable."

Ron Westgate
Fall River Facility Manager
Vicor Corporation
Andover, MA
- Implemented various energy conservation projects, resulting in a savings of $353,175 annually.
- Avoided/reduced greenhouse gas emissions by 4,921,480 lbs.
- Saved 2,871,342 total kilowatt hours annually.

“Our Toxics Use Reduction efforts have always been about minimizing the impact of our operations on the communities that host our facilities and realizing the savings generated through the efficient use of resources. TUR techniques have clearly had a positive effect on our operations bottom line.”

Edward Gomes
EH&S Manager
Vicor Corporation

Toxics Use Reduction is a pollution prevention approach that is successfully used by small companies, municipalities and community groups to improve health and safety of workers and the public.

Moreno Auto Body
Roxbury, MA
With the help of a TURI grant, the Boston Public Health Commission helped Moreno Auto Body switch to safer alternatives.
- Replaced toxic spray gun washing chemicals — toluene and acetone that are known to cause damage to the central nervous system — with a more effective and less expensive water-based system.
- Indoor air quality monitoring showed a 94 percent decrease in the presence of acetone and an 88 percent decrease in the presence of toluene in the air.

Juan Chavez
Owner of Moreno Auto Body

Cape Cod Cooperative Extension
Barnstable, MA
- Designed an education program to stop perchlorate contamination in public and private drinking wells by promoting LED flares and the recycling of perchlorate flares.
- Held educational sessions with municipal departments and distributed the safer LED signal flares.
- Created a video to educate emergency responders on the benefits of replacing perchlorate flares with LED flares.

“The funding from TURI was instrumental in our work, and we are gratified to be honored in this way. We also see it as well-earned recognition for first responders and boaters who embraced this project as their own. They are environmental leaders by using the safer alternatives and returning existing flares for safe disposal.”

Michael S. Maguire
Cape Cod Cooperative Extension Educator

Town of Yarmouth Police Lieutenant Steven Xiurhas demonstrates the safer LED flare.
About the Toxics Use Reduction Act Program

Twenty years ago, the Massachusetts legislature passed landmark legislation — the Toxics Use Reduction Act (TURA). Today, the TURA Program is considered a model environmental policy by other states and countries. Among industries subject to reporting since 1990 (and adjusted for changes in production), chemical use has been reduced by 40%, byproducts by 71%, and releases on site by 91%. The three agencies below have provided training, grants, technical assistance and support to help companies reduce toxic chemical use and costs, improve health and safety and establish new green markets.

TURI 600 Suffolk Street
Lowell, MA 01854
978.934.3275
www.turi.org

Provides education, training, and grants for Massachusetts industry and communities; sponsors research and demonstration sites on safer materials and technologies; provides policy analysis; and manages the TURA Science Advisory Board.

OTA 100 Cambridge Street, Suite 900
Boston, MA 02114
617.626.1060
www.mass.gov/eea/ota

A non-regulatory agency within the Executive Office of Energy and Environmental Affairs that provides free, confidential, on-site technical and compliance consultations to Massachusetts businesses and institutions.

MassDEP One Winter Street
Boston, MA 02108-4746
617.292.5500
www.mass.gov/dep/toxics/toxicssus.htm

Certifies Toxics Use Reduction (TUR) Planners, receives and reviews toxics use reports submitted by companies, provides guidance, takes enforcement actions, and collects chemical use data and makes it available to the public.