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Reduce the Toxics

Imagine a day when every company in your community drastically reduced its carcinogens and other damaging chemicals. For a lesson in how-to, governments can look to Massachusetts, which provides a sterling example of what political will and an ambitious strategy can achieve.

The Toxics Use Reduction Act was introduced in 1990, and by 2000, Massachusetts' largest industries had reduced their:

- toxic chemical use by 40%,
- toxic transfers offsite by 36%,
- toxics shipped in products by 47%,
- toxic by-products by 58%, and
- toxic releases to the environment by 90%.

And they saved money doing it. An evaluation showed that more than two-thirds of the firms collectively saved \$14 million, while increasing production by one third. They also reduced releases of carcinogens to the environment by 76%.

A typical success story is LePage's, an adhesive tape manufacturer. After hundreds of tests with different solvents and adhesives, it created adhesive formulations that were free of cyclohexane and vinyl acetate. As a result, it was able to develop new and better products, while significantly reducing its toxic chemical use.

How did Massachusetts get so far so fast? And how can other governments do the same?

Step 1: Pass a Toxics Use Reduction Act with the goal of promoting safer and cleaner production, while enhancing the economic viability of your companies. Change from controlling

We need to set the agenda and push for what we want — not just for what we don't want.

— Beverley Thorpe

end-of-the-pipe pollutants to controlling the chemicals themselves, and how they are used.

Step 2: Set targets such as reducing the amount of chemicals used, and toxic waste released, in your province, state or nation by 50% within seven years.

Step 3: Require companies to produce pollution prevention plans that describe how they can reduce their use and release of toxic chemicals over a prescribed period of time, with updates every two years. Require them to do detailed accounting of the amounts used, generated as waste and shipped in or used as product (known as materials use accounting). Charge them a fee, and use it to provide technical support. (See Steps 4 and 5)

In Massachusetts the planning process begins when the company solicits ideas from its employees. This recognition — that employees have valuable knowledge — can translate into using chemicals more efficiently. Poly-Plating, one company that produces nickel-plated parts for other industries, involved its employees in redesigning its nickel-plating methods. The redesign reduced the company's use of acid by 96%, its acid waste disposal costs by 91% and its water and sewage fees by 98%. The company had a total annual savings of \$107,000 and a 25-month payback period for its investment.

Initially about 1,000 companies were required to report their chemical use and emissions. However, by 2005, 450 of these companies no longer produced enough chemicals to meet the reporting thresholds. The Robbins Company that does metal finishing

- Massachusetts Toxic Use Reduction Act: www.mass.gov/dep/toxics/toxicsus.htm
- Office of Technical Assistance Case Studies: www.mass.gov/ota/cases
- Toxics Use Reduction Institute: www.turi.org

slowly changed its processes to reduce or eliminate all of its reportable toxic substances. By 1994 it had re-engineered the annealing process to get rid of ammonia, its last reportable substance under the Toxics Use Reduction Act.

The Massachusetts experience shows that simply requiring companies to write pollution prevention plans pays off. Although companies are not legally bound to implement them, 80% of them do. The plans help companies understand why they are using toxic chemicals, how they are using them and how they can reduce them. To ensure consistency and an appropriate level of detail, the plans must be signed by certified trained planners.

Step 4: Set up an Office of Technical Assistance, funded by the toxics fees, to help businesses with confidential onsite engineering and technical advice on how to replace and reduce their toxic chemicals.

Step 5: Establish a Toxics Use Reduction Institute, financed by the same fees, to test and promote alternatives to toxic chemicals, and to provide training, information and a laboratory service.

The Institute also works with small businesses and community groups in Massachusetts to extend the reach of the program. Grants are awarded to groups such as the Healthy Boston

Schools Janitorial Project to cut down their use of toxic cleaners.

Step 6: Require companies to make progress reports every year and to publish them on the Internet.

With these reports, everyone knows what has been accomplished. They know that pollution has been reduced inside and outside the plants, that companies have saved money buying and disposing of chemicals with less paperwork and fewer permitting problems, and that industries in their communities can export their products to places like Europe that have higher standards.



Michael Ellenbecker, Director of TURI, presenting an award to Jack Bailey of Bose Corporation.