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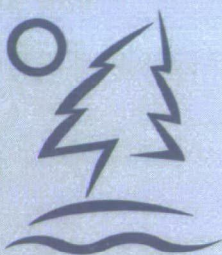
Consumer Labeling Initiative reveals surprising and not-so-surprising facts about consumers and product labels.

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# Pollution Prevention News

## Project XL Agreement Reached with Weyerhaeuser

In January, EPA reached agreement with Weyerhaeuser Co. and Georgia state officials on participation in Project XL by Weyerhaeuser's Flint River pulp mill in Oglethorpe, Georgia. Project XL (for eXcellence and Leadership) is the Clinton Administration's innovative effort to reinvent environmental regulation by allowing more flexibility in exchange for greater protection of public health and the environment. EPA Administrator Carol M. Browner said, "The Project XL agreement will enhance the pollution prevention program for the Flint River, a crucial

economic and recreational benefit for Georgia citizens."

Under the agreement, Weyerhaeuser will implement changes in its facility to meet tough standards of superior environmental performance. Regulatory flexibility will be provided in exchange for the agreement which may be revised or terminated at any time during the 15-year agreement period. The agreement goals include:

- Reduction in water use to approximately 10 million gallons a day (com-

Continued on page 2

## EPA Reorganization Announced

In an organizational restructuring announced on Feb. 27, EPA Administrator Carol M. Browner has created several new offices to improve the Agency's ability to accomplish its highest priorities. The reorganization is intended "to serve better the entire Agency and the American people for many years to come," noted Browner.

Among the changes are a new Office of Children's Health Protection in the Office of the Administrator, to be headed by Dr. Philip Landrigan, an expert on environmental health and pediatrics from Mount Sinai School of Medicine. The new office is charged with reviewing and setting child-protective environmental standards, starting with five of the most significant current EPA standards; researching and setting new policies on children's unique susceptibility and exposure to pollutants; and expanding community right-to-know and education on children's health.

Another change is the new Office of Reinvention, also within the Office of the Administrator, to be headed by J. Charles Fox, currently Maryland's Assistant Secretary for the Environment. The Office of Reinvention will oversee Agency-wide initiatives such as the Common Sense Initiative and Project XL, and consolidate the full range of Agency initiatives outlined in the March 1995 Reinventing Environmental Regulation report issued by President Clinton and Vice President Gore. The new organization will also be available to assist regulated entities in seeking innovative and flexible new ways to meet strong environmental standards.

The reorganization will also draw together EPA's statistical information resources to create a new Center for Environmental Information and Statistics, housed in the Office of Policy, Planning, and Evaluation, to be operational by January 1, 1998.



## News and Notes

### Morning Dialogue Sessions Explore P2

The Pollution Prevention Trade Association Workgroup, initiated by EPA's Office of Pollution Prevention and Toxics, has started a series of monthly "morning dialogue" sessions as a forum for trade association staff to learn about pollution prevention programs, ask questions, and engage in discussions with officials responsible for running the programs. So far, topics have covered statutory integration, enforcement compliance notebooks, ISO 14000, and TRI materials accounting. The sessions occur on the second Friday of each month.

For more information, contact Barbara Bush, American Institute for Pollution Prevention, 202-797-6569.

### Race To Recycle In Mass.

An annual Race-to-Recycle contest is the brainchild of WasteCap, a non-profit Boston-based organization that promotes recycling and waste reduction to business. The third annual contest will take place this summer from July to September, pitting Massachusetts office buildings from across the state against one another to see which can recover the most recyclable materials. Last year the winner in the Very Large-Size Building Category was One Beacon St. in Boston, owned by Prudential Real Estate Investors, with a 64% recycling rate. For information, contact WasteCap at 617-236-7715. (*Reported in Waste Age's Recycling Times, Feb. 3, 1997*)

### Businesses For The Bay

A new voluntary program designed to encourage individual businesses to set their own annual pollution prevention goals has been launched with the aim of reducing chemical releases to the Chesapeake Bay. Participating businesses will work with the pollution prevention offices in their state to implement pollution prevention measures. As part of the program, the Chesapeake Bay Executive Council will distribute Businesses for the Bay Excellence Awards in 1997. For more information, call 800-YOUR-BAY.

### ILSR Seeks News of Beyond-50% Programs

The Institute for Local Self-Reliance (ILSR) has a one-year, EPA-funded grant to study trendsetters in public and private recycling. ILSR is looking for information on waste reduction and recycling programs that have achieved 50 percent and higher recovery levels. The study is aimed at identifying successful models that can be replicated nationally, and at countering critics of recycling and other forms of materials recovery who assert that the effective limit for such programs is 25-30% of the wastestream. ILSR can be contacted at 2425 18th St. NW, Washington, D.C. 20009, tel: 202-232-4108, fax: 202-332-0463.

### Weyerhaeuser

*Continued from page 1*

- pared to the industry daily mill average of 25 million gallons);
- ▶ A 50% reduction in wastewater from the bleach plant, which will reduce the amount of chlorine compounds and pollutants discharged into the Flint River—a critical community priority;
- ▶ Enhancement of wildlife in 300,000 acres of Weyerhaeuser's forest lands; and
- ▶ Updating of the mill's environmental management system to conform to new international standards (ISO 14001), which emphasize careful design and pollution prevention.

Strong community involvement is an essential feature of Project XL. The Weyerhaeuser project was developed with substantial involvement of local citizens, including participation in three public meetings. The agreement calls for public access to data and continuing public monitoring of the project.

The major product of the Flint River mill is fluff pulp, the absorbent component in diapers. The mill, which opened in 1981, and has 500 employees, was designed as a state-of-the-art facility using less water than most mills of its kind.

For more information, contact: Nancy Birnbaum at 202-260-2601.





## Awards

## Pollution Prevention Technology Nabs Popular Science's Reader's Choice Award

**A**n EPA Design for the Environment project was one of 100 winners in *Popular Science* magazine's "Best of What's New" awards for 1996. The Liquid CO<sub>2</sub> Dry Cleaning project was also the recipient of the Reader's Choice Award through a vote conducted on the Internet. Funded in part by the President's Environmental Technology Initiative, this new option for dry cleaning clothes was developed by scientists at Los Alamos National Laboratory and Hughes Environmental Systems. The method uses carbon dioxide liquefied under 800 to 1,000 pounds of pressure. When the CO<sub>2</sub> returns to its gas state, the dirt just falls out of the clothes! Repressurized, the CO<sub>2</sub> can be recycled, and the only waste generated by the process is the dirt removed from the clothing.

Liquid CO<sub>2</sub> dry cleaning is expected to be marketed by June 1998, and could eventually replace perchloroethylene, a toxic chemical and possible carcinogen that has been the mainstay of the dry cleaning business for 60 years. The dry cleaning industry is under severe pressure from state and federal regulators to develop an acceptable alternative to conventional chemical dry cleaners, particularly perchloroethylene. The new technology should cost about the same but use less energy than the current treatment. It can clean any material that is currently dry cleaned, and can also clean furs, leathers, and sequins.

Three spots on *Popular Science*'s top 100 list also went to several energy technologies developed with support from the Department of Energy's Office of Energy Efficiency and Renewable Energy. They are:

► **Solar Two, the world's most technically advanced solar power plant.** The tower uses an innovative molten salt technology to capture and store the sun's energy—even at night and in bad weather. Located in California's Mojave Desert, Solar Two uses 1,926 heliostats (mirrors) in a circular formation around a 300-foot tower. The mirrors track the sun's path,

focusing sunlight onto a central receiver to generate a clean, inexhaustible supply of energy.

Solar Two is a joint effort of DOE and a consortium of electric utilities and high tech companies led by Southern California Edison.

► **A new aerosol-based technology for sealing air leaks in HVAC ducts,** developed by Lawrence Berkeley Laboratory scientist Mark Modera. In typical homes, sealing these leaks can reduce heating and cooling energy costs from 15 to 30 percent, and saving as much as one quadrillion BTUs per year in the U.S. Using Modera's system, grilles are temporarily sealed, aerosolized adhesive particles are blown into the duct system and flow to the leakage sites, creating a sealant.

► **Flexible solar electric shingles roofing modules,** developed by United Solar Systems Corp., in collaboration with Energy Conversion Devices Inc., both of Troy, Mich. These solar electric modules, resembling conventional asphalt roofing shingles, are composed of amorphous silicon photovoltaic (PV) cells deposited on flexible stainless steel. These overlapping shingles replace ordinary architectural roofing materials. The modules can produce 5-6 watts AC/square foot peak power in full sun conditions and produce approximately 25 watt-hours/square foot on average for daily energy output. This technology also won the Grand Award in Environmental Technology.



Solar Two power tower, an advanced solar thermal central receiver in Barstow, CA.





## Education

### The Greening of Management Education

*"Deja Shoe, the Environmental Footwear Company, sought to revolutionize the manufacture of footwear by developing products made completely from recycled materials, eliminating the use of toxic adhesives, and minimizing other negative impacts on the environment. How can Julie Lewis, the company's founder and a trained chemist with strong environmental convictions, couple environmental strategy with management principles to out-compete industry giants such as Nike and Timberland?"*

**A**s businesses grapple with new opportunities and challenges in environmental protection, business schools are grappling with the need to turn out managers and executives with a new appreciation of the links between industry and the environment. Professors are "greening" the curriculum of B-school courses, injecting environmental issues and examples in all of the core courses. Case studies, as the excerpt above indicates, are based on real-life examples of the intersection of environment and business. Partnerships between business leaders and university students and faculty are spurring two-way learning.

One outfit that is aiming at "greening" business schools is the non-profit Management Institute for Environment and Business (which merged with the World Resources Institute in October 1996). MEB/WRI's three-year old BELL (Business-Environment Learning and Leadership) program began with the curricula of 25 business schools. It is currently in the process of expanding to 50 schools, with the eventual goal of reaching all 700 business schools in the United States. "Our goal is to infuse environmental concepts into the core curricula of all business schools. Because environmental considerations pervade all activities in the modern firm, students entering the work force in any functional specialty must have some training in environmen-

tal management," says Rick Bunch, director of the Bell Program. BELL Schools currently include Carnegie-Mellon University, Dalhousie, Dartmouth College, George Washington University, Howard University, Idaho State University, and numerous others.

MEB/WRI's curricular efforts have taken the form of a series of seven teaching modules in the areas of accounting, public policy, environmentalism, finance, strategy, marketing, and operations management. Each module provides readings and discussion notes on essential environmental considerations, as well as a syllabus with teaching points and selected readings from texts and journals. Case studies — developed by a variety of institutions such as Harvard Business School, MEB/WRI, the National Pollution Prevention Center, etc. — add both details and texture to the curriculum. For example, a simulation exercise involving hydropower and salmon in the Columbia River Basin illustrates the complex nature of sustainable development. AT&T's Columbus Works plant offers a classic example of how total quality management techniques can be used to eliminate an environmental hazard.

MEB/WRI has developed the BELL program in a southerly direction as well. LA-BELL (Latin America BELL) is a network of management faculty and business executives formed to strengthen the role of the private sector in pursuing goals of sustainable development in Latin America.

A recent new venture by MEB/WRI — called, indeed, New Ventures — will identify and promote the entrepreneurial spirit among students, supporting the initial planning and evolution of selected sustainable projects. The idea is to serve as a link between sustainable enterprises and groups of investors, helping entrepreneurs find initial funding for their projects and making them attractive to the investment community.

For more information on the BELL and LA-BELL programs, contact MEB/WRI at 1709 New York Ave. NW, Washington, DC 20006, tel: 202-638-6300, fax: 202-737-1510, Internet: <http://www.wri.org/wri/meb/>





## Education

## Next Steps and Long-Term Needs

*David Allen, Beckman Professor of Chemical Engineering, Center for Energy Studies, University of Texas at Austin*

Exciting activities are underway in curriculum development, technical assistance, and campus ecology. While I am very enthusiastic about these activities, I do have concerns about their long-term viability.

Most pollution prevention efforts at universities and other educational institutions have been the result of grassroots efforts. Dedicated individuals or small groups, working in isolation, have generally been responsible... There are, of course, exceptions. The program at Tufts University, which has had support from the highest levels of the University Administration, and which has permeated the entire campus, is a dramatic counter example. Still, most of the efforts are the result of individuals, and they can disappear as quickly as they appeared. Therefore, the next step in promoting pollution prevention

at educational institutions should be to encourage long-term commitments to pollution prevention... Let me suggest some ways to encourage engineering programs to make such long-term commitments:

(1) Have employers demand that the students they hire understand pollution prevention principles.

(2) Have accrediting boards look for pollution prevention and design for the environment activities in degree programs.

(3) Have new editions of leading textbooks for each discipline incorporate pollution prevention.

These are just a few simple, self-evident suggestions. My main point is that pollution prevention at educational institutions needs to enter a new phase in its development. The past decade has shown us that successful programs in curriculum development, technical assistance, and campus ecology can be developed. The goal for the next decade should be to make these activities the rule, not the exception. ...

## The Challenge for Higher Education

*Jonathan W. Bulkley, Director, National Pollution Prevention Center, University of Michigan*

... In my view, certain pollution prevention and sustainable development activities in industrial settings have moved ahead of the present curriculum in many colleges and universities. In part, this is the result of the economics associated with waste clean-up and other associated liabilities. Accordingly, it is desirable for colleges and universities to establish enhanced linkages with pace-setting industrial locations where very innovative and creative pollution prevention activities are underway. The linkages can take a variety of forms including joint faculty-industry research efforts, student pollution prevention internships with industry, faculty joining industry for special projects/tasks, and industry leaders teaching innovative courses at colleges and universities.

From a personal view, on this campus there are two pollution prevention activities which I have observed that are both exciting and productive. First, in a number of sponsored research pollution prevention projects, a diverse group of students have come together to work in a very productive and useful way. The key to this success is the leadership offered by the director of the research effort.

A second example again relates to students. In this case, the NPPC has experience with the placement of pollution prevention interns in industry, not-for-profit organizations, and government. The quality of effort by these young people from a variety of backgrounds, disciplines, and universities has clearly demonstrated that a group of exceptionally talented and capable young people are coming forward to work and help solve these problems that need pollution prevention and sustainable development concepts and approaches.

*Two views on integrating pollution prevention and education, from two noted practitioners in the field.*

*Excerpted from EPA's "Pollution Prevention 1997: A National Progress Report," available from the Pollution Prevention Information Clearinghouse (202-260-1023) in May.*

### New from NPPC

The National Pollution Prevention Center for Higher Education has released an expanded and revised 1997 edition of the **Directory of Pollution Prevention in Higher Education: Faculty and Programs**. (186 pgs., \$20). Also available are two new cases studies: "3M: Waste Minimization," and "Chrysler Corporation (A): the Jefferson North Assembly Plant" (\$2 each). To order, send a check payable to University of Michigan/NPPC to NPPC, 430 East University, Ann Arbor, MI 48109-1115, tel: 313-764-1412, fax: 313-647-5841.





## Labeling

### Do Consumers Read The Labels? Not Often, Says CLI Report

**A**n initial report on EPA's Consumer Labeling Initiative (CLI) addresses the difficulties consumers have in reading and understanding the environmental, health and safety use information contained on product labels. CLI is a year-old cooperative effort between EPA and a wide range of stakeholders to foster better public health protection and pollution prevention by improving the information contained on the labels of home and

garden pesticide and hard-surface cleaning products.

The Phase I Report presents the results of preliminary qualitative research designed to evaluate consumer

understanding and use of product labels. Researchers conducted 135 in-depth one-on-one interviews with users of products in three categories — indoor insecticides, outdoor pesticides, and household hard-surface cleaners — in five major cities across the U.S. The qualitative research was used as a means for identifying and probing issues related to the product labels, not to provide statistically representative responses. The findings, nevertheless, are illuminating.

According to the research, consumers generally do not read labels either for product selection or product usage. Consumers do read labels if the product is new to them or if there is a concern or expectation of hazard if the product is used incorrectly. One respondent noted, "This is stuff I've been using so long, I don't remember the first time I looked at it. Honest, the way labels are written, I wouldn't know whether an ingredient was good or bad."

Both a literature review and the consumer research indicated that consumers feel that household chemical products are safe if used according to directions. Purchasers of insecticides and outdoor pesticides read the label primarily to understand product efficacy and directions for

use. Consumers with children or pets are more likely to read precautionary labeling for pesticide products before purchase. Not one respondent indicated having ever read the disposal information on a label.

As far as label comprehension, consumers in the study wanted less technical language on product labels, and for pesticide labels, larger type size and better color contrast. There was a consensus that when there is a significant potential hazard, the label should prominently instruct consumers to read the label. Most consumers in this study simply do not read the parts of a label that are confusing to them. When they did read the labels, consumers judged the labels on household cleaning products not regulated by FIFRA to be easier to read and understand than those on FIFRA-regulated products. Consumers also consistently misinterpreted the EPA-mandated labeling, "Hazards to humans and animals" as a stand-alone statement meaning "hazardous to humans and animals." There was also a universal lack of understanding of the phrase, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling" which consumers interpreted as a protective statement by manufacturers to avoid liability for any injuries caused by not following instructions.

The report recommends undertaking a quantitative assessment of consumer comprehension, behavior, and satisfaction with labeling, and formation of a Product Label Consumer Education Task Force which would emphasize to consumers the importance of reading labels. The report also recommends that the Office of Pesticide Programs consider three interim but immediate label improvements: (1) broader use of common names for active ingredients in addition to approved chemical names; (2) use of the heading "first aid" instead of "statements of practical treatment;" and (3) inclusion on labels of phone numbers for general or emergency information.

*"Consumers generally do not read labels either for product selection or product usage."*

The CLI report is available on the Internet at:

<http://www.epa.gov/opptintr/labeling/phase1>

or from the Pollution Prevention Information Clearinghouse

(tel: 202-260-1023, fax: 202-260-0178).

For more information, contact Julie Lynch at 202-260-4000.



## Information

## Compliance Assistance Centers Open Doors For Electronic Information

**H**ow does a small business stay on top of the latest environmental requirements and technologies?

Compliance Assistance Centers — one of the 25 regulatory reinvention initiatives proposed by EPA under the Clinton Administration — are designed to answer that question. Developed by EPA's Office of Enforcement and Compliance Assistance, there are currently four centers in operation in the areas of agriculture, metal finishing, printing, and auto service and repair. The centers function as communications centers rather than physical "walk-in" centers. Each of the existing centers represents a sector with large populations of companies (e.g., half a million auto service and repair shops, 3,500 metal finishing shops) that generally wish to comply with the law but may not know how to comply or where to go for help.

The ultimate goal of the Compliance Assistance Centers is to provide small businesses with an understanding of their environmental requirements and encourage them to take appropriate steps to improve their compliance picture. The centers are also an efficient way to provide state and local based officials with sector-specific information on federal regulations and pollution prevention practices to prevent duplication of effort. Each center provides, via the Internet or through telephone and fax-back/mail back service, the following:

- ▶ Sector-specific, multi-media federal regulatory explanations made available through easy access to federal regulations, interpretations, and compliance guides; also, state and local information, where available.
- ▶ Compliance tools that can be downloaded and used by small business, regulators, inspectors, and technical assistance providers to self-audit, determine emissions and wastes, and calculate the costs of complying.
- ▶ Process-specific training for regulators and technical assistance providers to better understand the businesses they deal with.

- ▶ A place to ask questions and get answers, through chat rooms, specialized conferences/forums, and access to experts who can answer compliance and technical questions.
- ▶ Information on technologies and techniques that can help small businesses comply, with an emphasis on pollution prevention methods that save money.

Each center carries a range of pollution prevention information, from case studies to lists of vendors of pollution prevention equipment. Each center is operated by a partnership of private sector trade associations, universities, and government agencies.

### Successes To Date

Despite limited publicity to date, the centers have already been making their mark. For example: the National Metal Finishers Resource Center, open since October 1996, already has 1600 registered users, 48% of which are metal finishers; GreenLink, the auto service and repair center, has been open since June 1996 and has received 322 phone calls and fax-back requests and almost 100,000 visits to its home page (26,000 in January 1997 alone).

### Four New Ones

Four new Compliance Assistance Centers are under development covering chemical manufacturers, municipal/local government, transportation, and printed wiring board manufacturers. These areas were selected based on the potential for multi-media risk reduction and the population of small businesses that aren't being reached through traditional compliance monitoring and enforcement activities. In the chemical industry, for example, over 60% of manufacturers have fewer than 10 employees. The municipal sector consists of 39,000 units of local general purpose government. The new centers will be opening in 1997-98.

### How to Reach Them:

#### **National Metal Finishing Resource Center**

<http://www.nmfrc.org>

#### **Greenlink: the Automotive Compliance Information Assistance Center**

<http://www.ccar-greenlink.org>

1-888-GRN-LINK (476-5465)

#### **Printer's National Compliance Assistance Center**

[http://www.hazard.](http://www.hazard.uiuc.edu/pneac/pneac.html)

[uiuc.edu/pneac/pneac.html](http://www.hazard.uiuc.edu/pneac/pneac.html)

#### **National Agriculture Compliance Assistance Center**

<http://es.inel.gov/oeca/ag/aghmpg.html>

For general information on the centers, contact Lynn Vendinello, EPA, 202-564-7066.



## Information

*Surfing the Web has become a daily (and nightly) pasttime for "Web-sters" with a passion for computers and the environment. The number of environmental and pollution prevention-related web sites is mushrooming. More and more sites are offering full multimedia presentations, rather than simply text files. Here are a handful of sites we recently came across.*

## What's New On The Web?

### Sustainable Development Indicators

Since January 1994, the Sustainable Development Indicators (SDI) Group has provided a federal forum for the exchange of ideas, methods, and data related to sustainable development indicators. Made up of representatives from 12 federal agencies, the group has a mandate to identify, organize, and report on national sustainable development indicators. The group has selected 32 proposed indicators as measures of progress towards sustainable development in the United States. The list has been widely reviewed—both on the Sustainable Development home page on the Web, and by groups as diverse as high school students active in sustainable development and corporate executives from Fortune 500 companies. You can add comments or learn more about SDI efforts at <http://venus.hq.nasa.gov/iwgsdi>.

### Real-Time Air Pollution Data—<http://www.epa.gov/oar/oaqps/realtime>

A visit to a Web site hosted by EPA's Office of Air Quality and Planning Standards yields real-time air pollution data for the states of CA, CO, DE, IL, KY, MD, MI, NJ, PA, TX, UT, and WI. Each state's offerings vary, but many include information about air pollution, current weather conditions, air quality and pollution forecasts, and wood and coal burning conditions.



### Enviro-Quiz—<http://www.well.com/user/earl/quiz3.html#207r>

Test your knowledge of recycling, waste generation, and other environmental subjects. This quiz, created by Earl Vickers, is one of three quizzes originally included on the Awesome Possum game cartridge (© Time Warner Interactive) and now posted by the Well, a self-described "literate watering hole for thinkers from all walks of life." Questions range from:

"How many species vanished from the world's tropical forests in the past 20 years?" to "How much do sidewalk oxygen vendors in Mexico City charge for a minute of fresh air?"

### Visualizing Global Warming with CO-VIS—<http://www.covis.nwu.edu>

The CoVis Project, a team of collaborating researchers from Northwestern University, the University of Illinois in Urbana-Champaign, the Exploratorium in San Francisco, and Bellcore in New Jersey, helps high school students and teachers explore issues of scaling, diversity, and sustainability. Using state of the art scientific visualization software, specially modified to be appropriate to a learning environment, students have access to the same research tools and data sets used by leading-edge scientists in the field. As an example, CoVis's Geosciences Webserver offers lesson plans for students to explore the issues of natural variation and unnatural variation in global warming patterns by examining seasonal patterns using the Greenhouse Effect Visualizer; investigating Mauna Loa's carbon-dioxide data set; exploring the past century of average global temperatures; and exploring how much energy is added to the earth system if the average global temperature increases.

### The Nature Conservancy—<http://www.tnc.org>

The Nature Conservancy's Web site is chock full of photographs (over 300), audio and video clips, and short descriptions of this non-profit group's efforts to purchase or manage parcels of land in order to protect important natural resources. Clicking on a world map allows a user to learn about Nature Conservancy programs in that country. Nature Facts offers weekly tidbits about wildlife and conservation. A Species Spotlight and Preserve Profile provides information on rare species and habitats. A Scientific Resource Center allows researchers and conservationists to access to





## Information

technical data from the Conservancy's biological and conservation databases.

**PROCOR Technologies, Inc.—**  
**<http://procor.misi.net/articles.htm>**

PROCOR is a software and professional engineering services firm specializing in material waste prevention. The company provides software and engineering solutions to help industry cut production costs by reducing the generation of hazardous and solid material waste. As an example, its MatSTAR engineering tool integrates environmental information with manufacturing information to help cut production costs by reducing raw material waste. A number of pollution prevention articles are posted on PROCOR's Web site, including:

- ▶ Building a Successful Material Waste Prevention Program
- ▶ Using a Waste Per Unit of Production Analysis as a Material Waste Prevention Tool

- ▶ Reducing Packaging Waste
- ▶ Reducing Waste Oil
- ▶ Horizontal Drum Dispensing Leak Prevention
- ▶ The Importance of the *Total Cost of Waste*

**PPD Comes to the Web—**  
**<http://www.epa.gov/opptintr/p2home/>**

EPA's Pollution Prevention Division has arrived on the Web with a Pollution Prevention Home Page, accessible through the general EPA Web site. Included on the P2 Home Page are background information on pollution prevention, information on P2 and finance, accounting, Pollution Prevention Incentives to States grants, environmentally preferable products, and more. Also available are links to other EPA offices and to resources outside EPA.



## Materials/Waste Exchanges

**WANTED:** *Acetic acid, content 16% or greater.* Taking a leaf from newspapers' successful classified ads, many states are in the business of operating materials exchange programs to help demand meet supply. Specifically, the exchanges match up businesses and other organizations that generate unwanted but usable materials with businesses that can use the products as raw materials. With search capabilities, widespread availability of computers, and ease of filling out forms, the Internet is a natural venue for exchanges of solid and hazardous waste materials. And indeed, most of the established waste exchanges have taken their catalogues online. For example:

**CALMAX—<http://www.ciwmb.ca.gov/mrt/calmax/calmax.htm>**

Calmax, a free service provided by the California Integrated Waste Management Board, is designed to help businesses find markets for materials they have traditionally discarded. The CALMAX Catalog can be searched for Wanted or Available

materials, by any of 15 different material types and by 15 different regions in California. A new addition to CALMAX is KidMAX, which specifically targets California's schools for donations of free materials.

**Chicago Board of Trade Recyclables—**  
**<http://www.cbtr-recycle.com/indexst.html>**

CBOT has taken a slightly different approach to its exchange program, aimed at allowing business users to spend as little time as possible online. Rather than having buyers read the postings of items for sale, one by one, to find what he or she wants, in the CBOT Exchange buyers fill out a form online and then wait for the Exchange to contact them by e-mail when the items they are looking for are available.

For a listing of waste exchanges operating on the Internet, check IMEX's listing (<http://www.metrokc.gov/lhwmp/cesqg/exch1.html>).

### Lots More Sites. . .

For detailed listings of Internet pollution prevention sites and help finding your way around the Internet, check out the "Guide to Accessing Pollution Prevention Information Electronically" (1997, 74 pp.), compiled by Lisa Regenstien, Northeast Waste Management Officials Association. Send check for \$15.00 (\$7.50 for non-profits and govt. agencies) to NEWMOA, 129 Portland St., Boston, MA 02114-2014.





## Resources

41 **Designing Safer Chemicals: Green Chemistry for Pollution Prevention**, ACS Symposium Series No. 640, covers the design or redesign of chemicals with the intent of making them safe for people and the environment. Edited by Stephen C. Devito and Roger L. Garrett, U.S. EPA. Available from American Chemical Society (\$89.95, 264 pages), 1155 16th St. NW, Washington, DC 20036, tel: 800-ACS-9919.

41 For consumers, the American Council for an Energy-Efficient Economy has issued the 5th edition of **Consumer Guide to Home Energy Savings**, an illustrated handbook (\$7.95) of practical steps that consumers can take to make their homes more energy efficient while saving money and energy. ACEEE has published five recent studies on utilities, including: **What Have We Learned from Early Market Transformation Efforts?** which reviews 11 efforts to affect the market for high-efficiency products; **DSM Programs in an Era of Tight Budgets**, which provides guidance on how to get the most "bang for the buck" from utility Demand Side Management programs; and **Partnerships: A Path for the Design of Utility/Industrial Energy Efficiency Programs**, which examines lessons learned from several partnership programs that utilities are using. To order, contact ACEEE at 2140 Shattuck Ave., Suite 202, Berkeley, CA 94704, tel: 510-549-9914, fax: 510-549-9984, e-mail: aceee.ix.netcom.com

41 **EPA's Annual Report of the Office of Pesticide Programs** notes that more than half of the 22 new pesticide active ingredients registered in fiscal year 1996 were safer, reduced-risk pesticides, such as biologicals. This continues a trend that began several years ago. The Office of Pesticide Programs has nearly completed plans to create a new Antimicrobial Division to expedite the registration of antimicrobial pesti-

cides with significant public health uses. Also in 1996, a significant number of partners and supporters joined the Pesticide Environmental Stewardship Program. To review the 1996 annual report, check EPA's home page on the Internet: <http://www.epa.gov>. Copies of the report can also be obtained from OPP's Communications Branch at 703-305-5017.

41 **A Financing Guide for Recycling Businesses: Investment Forums, Meetings and Networks** is a new EPA publication intended to help recycling/reuse businesses find needed financing, to help this sector of the economy grow and become more established. Produced by the National Recycling Coalition and Kirkworks, the guide provides information on sources of capital, financing strategies, and business planning. It also provides a detailed guide to state and local recycling and economic development agencies on how to set up a "recycling investment forum," an event that introduces recycling companies to potential investors. To order, call the RCRA/Superfund Hotline at 1-800-424-9346 (Document #EPA-530-R-96-012).

41 **Making the Connections:** Two reports from the Land Use, Transportation, Air Quality (LUTRAQ) project spearheaded by 1000 Friends of Oregon have just been published: Volume 7 is a 40-page, full-color Summary of the LUTRAQ Project (\$12), with examples of how various cities are addressing problems of integrated land use and transportation. Volume 8 is a 75-page Technical Report (\$10) on the state of knowledge about the relationship between transportation and urban form, with a step-by-step cookbook for developing an integrated transportation and land-use plan. To order, contact LUTRAQ at 1000 Friends of Oregon, 534 SW Third, Suite 300, Portland, OR 97204.



## Air Regs

## Agreement Reached with Lawn Equipment Manufacturers

**M**anufacturers representing over 90 percent of the industry that makes millions of engines used in lawn and garden equipment have signed a Statement of Principles with EPA establishing a framework for Phase 2 emission standards. A proposed rule is expected in Fall 1997. If adopted, the standards are expected to reduce hydrocarbon plus nitrogen oxide emissions by approximately 40 percent from the Phase 1 levels. (The Phase 1 standards become effective with the 1997 model year.) The engines involved in the agreement contribute about 7% of ozone-forming pollutants from mobile sources. This program, which will cover new equipment sold nationwide, does not affect existing lawn equipment.

Further control from lawn and garden equipment will depend on technologies which are expected to become cost-effective in future model years. Special emphasis is being placed on cleaner, more durable engine technology, such as overhead valve (OHV) technology with superior combustion chamber and cylinder head design. Manufacturers of Class 2 engines are expected to shift their production completely to OHV or comparably clean and durable technology as a result of these standards. The signatories also agreed to work on a voluntary fuel spillage reduction program.

For more information, contact Betsy McCabe, 313-668-4344.

## Utility NOx Emissions To Drop

EPA issued a final regulation under the Clean Air Act on December 13, 1996 that will reduce nitrogen oxide (NOx) emissions by nearly 900,000 tons per year from coal-fired electric utility boilers beginning in 2000. This represents a 15% reduction from current utility levels and a 5% nationwide reduction from all sources. NOx emissions are implicated in respira-

tory illnesses, premature mortality, and other health effects, as well as damage to crops, buildings and monuments, and increased acidity of lakes and streams.

The final rule sets specific NOx emissions limitations, but EPA is encouraging states to adopt an "emissions cap and trade" program instead. A cap-and-trade program gives utilities the flexibility to offset excess emissions at one plant with reduced emissions at another, as long as the total amount of emissions is lower than would have been achieved by simply meeting the individual plant-by-plant emission limits.

For more information, contact Peter Tsirigotis in EPA's Acid Rain Division, at 202-233-9133.

## EPA Trains Its Eye On Locomotives

On Jan. 31, 1997, EPA proposed the first standards to protect human health from air pollution from diesel locomotives. Air pollution from diesel locomotives includes nitrogen oxide, which causes smog, and particulate matters, or soot. A typical locomotive can produce as much nitrogen oxide in one year as 3,000 passenger cars. Smog causes serious respiratory illness and exacerbates asthma attacks in children. Particulate matter has been associated with cancer and premature death.

The new standards would be phased in beginning Jan. 1, 2000. The standards would apply to new engines as well as many older engines each time they are "re-manufactured," or given major repair, throughout their service life which can last 40 or more years. When fully phased in the standards will reduce nitrogen oxide emissions by two thirds or 600,000 tons annually. Locomotive-produced hydrocarbons (another contributor to smog) and particulate matter would be cut in half — reduced by 15,000 tons and 10,000 tons respectively.

The proposed rule is available electronically via the EPA Internet server via the dial-up modem on the Technology Transfer-Network (TTN), at 919-541-5742.

*Three new EPA regulations tackle nitrogen oxide (NOx) emissions from lawn equipment, locomotives, and utilities.*

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# Calendar

DATE/SITE	EVENT	SPONSOR	CONTACT	E-MAIL/WWW
April 14-16 Chicago, IL	'97 Recycling Symposium	Technical Association for the Pulp and Paper Industry	Kelley Dedman Tel: 770-446-1400 Fax: 770-446-6947	kdedman @ tappi.org <a href="http://www.tappi.org">http://www.tappi.org</a>
April 29-May 1 Bella Center Copenhagen, Denmark	Copenhagen Waste and Water 97		Vagn Isaksen Tel: 45 39 66 12 00 Fax: 45 31 51 96 36	
April 7-9 Auburn Hills, MI	Total Life Cycle Conference & Expo	SAE Intl.	Justine Petruska Tel: 412-772-8547 Fax: 412-776-5760	sae@sae.org <a href="http://www.sae.org">http://www.sae.org</a>
May 4-6 East Rutherford, NJ	Pollution Prevention: Tools for Making It Really Happen	American Institute of Chemical Engineers	Tel: 800-242-4363	xpress@aiche.org <a href="http://www.aiche.org">http://www.aiche.org</a>
June 2-3 Burlington, VT	16th Annual Northeast Resource Recovery Conference & Expo	Northeast Resource Recovery	Tel: 603-224-6996 Fax: 603-226-4466	
June 3-4 Albany, NY	10th Annual Pollution Prevention Conference: Progress Over a Decade: Lessons Learned	New York State Dept. of Environmental Conservation, Business Council of NY State, Environmental Business Association of NY State	Dorothy O'Hare Tel: 518-457-2553 Fax: 518-457-2570	
June 8-13 Toronto, Ontario	AWMA Annual Conference	Air and Waste Management Association	Maureen Brown Tel: 412-232-3444 x3122	mbrown@awma.org <a href="http://www.awma.org">http://www.awma.org</a>
June 23-25 Washington, D.C.	1997 Green Chemistry & Engineering Conf: Implementing Vision 2020 for the Environment	American Chemical Society, U.S. EPA, NRC, NSF, CMA, others	ACS Meetings Dept. 202-872-6286	
July 16-17 Baltimore, MD	Partnership for the 21st Century: Greening Federal Purchasing	Federal Environmental Executive, EPA, US Conf. of Mayors	Lee Salviski, OFEE 202-260-1297	
Aug. 17-22, 1997 Crested Butte, CO	The Practice of Pollution Prevention: A Critical Evaluation	Engineering Foundation	Tel: 212-705-7836 Fax: 212-705-7441	engfbd@aol.com

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