pprc

POLLUTION PREVENTION Northwest

YOUR QUARTERLY SOURCE FOR UNBIASED P2 NEWS AND INFORMATION FALL 2004

Economic Incentives and P2

*The US Environmental Protection Agency estimated in a 1999 study that it could save almost **$50 billion per year**, exactly one-quarter of the $200 billion spent annually on environmental management, by increasing the use of economic incentives in environmental regulation. Such staggering cost saving are only the tip of the iceberg when it comes to reaping the many potential benefits of this clever form of government regulation. This newsletter offers a brief summary of the more comprehensive Topic Hub on economic incentives soon to be published on PPRC's website. Also included in this newsletter is an update on the famously successful Electronics Recycling Event hosted by Green Star in Anchorage this past spring, the latest in P2-related events and seminars and more!*

What are Economic Incentives?

For the past 30 years, the heavy-handed regulatory approach has dominated environmental management in the United States. Many regulators, businesses, non-governmental organizations, communities, and others now see value in developing a new approach, one that builds upon the strengths of the regulatory framework, but also emphasizes flexibility and encourages innovation. Economic incentives do just that.

The use of economic incentives has been gaining momentum nationally and worldwide for its broad success in "harnessing the power of the market" for environmental protection. Market-based or economic incentives can be defined as aspects of laws or regulations that provide financial rewards for polluting less and impose costs of various types for polluting more, thus supplying the necessary impetus to polluters to cut pollution.

Market-based approaches to environmental protection in the form of economic incentives are a clever form of government regulation. They are based on the idea that it is possible to confront business and industry with the same kinds of incentives they face in markets for labor, capital, and raw materials—that is, the same motivation that forces businesses to be as efficient as possible in order to be competitive can be harnessed to protect the environment. Properly employed, markets can be used to implement a more sustainable economy. Such market-based approaches would make the market better reflect the environmental costs and benefits of business while at the same time promoting environmental protection.

Why Bother?

An incentive-based approach offers advantages that distinguish it markedly from the regulatory approach. These advantages include flexibility, encouragement of technological innovation, improved relationships between the private and public sector, better management of non-point emission sources, and substantial cost savings.

Economic incentives are premised on the notion that traditional regulatory approaches to pollution control are not only expensive, but do not provide an

continued on page 3...

INSIDE P2

What's New at PPRC?

Speak at the 2005 Northwest P2 Roundtable

The Northwest Pollution Prevention Roundtable and the Canadian Pollution Prevention Roundtable are joining forces to organize a vibrant P2 conference for Canada and the Northwest. PPRC always attempts to leverage on good opportunities as they arise. So, when PPRC learned that the national 2005 Canadian P2 Roundtable would be held in Victoria, British Columbia, PPRC took a keen interest. Both the meeting organizer, the Canadian Centre for Pollution Prevention, and PPRC felt that working together would offer professionals from across Canada and the Northwest US an excellent chance to network and learn from each other. As a result, the 2005 Northwest P2 Roundtable will be hosted by the Canadian Pollution Prevention Roundtable.

The Roundtable will be held in beautiful Victoria, B.C. Canada on June 1 - 2, 2005. We're seeking speakers on subjects including:

- Small Business P2
- Municipal P2
- Green Chemistry
- Industrial P2
- Building a Business Case for Environmental Projects
- Emerging Pollutants
- Sustainable Consumption
- Energy Efficiency
- Strengthening Linkages: P2 & …Agriculture, Air Quality, Climate Change, Community Based Projects, Compliance Promotion, Extended Producer Responsibility, Metrics, or Smart Regulations

To learn more and to submit an abstract to speak at the Roundtable, visit www.pprc.org/networking/speakerscall.cfm.

P2Rx CORNER

Homes Across America showcases resource-efficient homes throughout the United States. Visitors can view home profiles or use an on-line application to submit a home to include. The site also offers a database of contacts, listed by state, which can supply technical assistance on resource efficient building. The site is for contractors, architects, homeowners, and anyone interested in seeing ways to improve the resource efficiency of a home. Homes Across America is a project of Peaks to Prairies, supported by the Pollution Prevention Resource Exchange (P2Rx) and is funded by the U. S. Environmental Protection Agency. Check it out at www.homes-across-america.org/index.cfm.

Priority Chemicals and Supply Chain Management

PPRC will identify priority chemicals (targeted by federal, state and local agencies) that are currently being used in product manufacturing or food production. Once PPRC has identified a core set of priority chemicals or substances then it will: 1) Compile a list of products that use the priority chemicals and a subsequent list of alternatives; 2) Document the primary Northwest-based original equipment manufacturers (OEMs) and affected suppliers; and 3) Determine if, how, and what Greening Supply Chain strategies (bans, reformulation, mentoring, technical assistance) can be strategic for OEMs to promote the elimination or reduction of the chemicals/substances throughout their supply chains. For more information on this project, contact Chris Wiley at cwiley@pprc.org or at (206) 352-2050.

Northwest P2 Projects Database

Find out which Northwest transit system is using hybrid buses, and who to call for more information. Network with someone who has designed a collection program for unwanted medications. Or talk with someone who has researched the types of mercury-containing components found in water systems.

PPRC's newly redesigned web site features several new tools, including this collection of P2 projects and activities happening in the region. This searchable database currently contains descriptions and contact points for several dozen projects. It's a handy way to find out what's happening, and who has expertise developing targeted P2 campaigns. If your projects aren't yet listed, contact Crispin Stutzman at cstutzman@pprc.org or at (206) 352-2050 with the specifics and we'll add them to the collection. Take a look at the P2 Projects currently listed at www.pprc.org/activities.

Economic Incentives (continued...)

incentive to go beyond compliance. While still requiring strict adherence to environmental standards, economic incentives tend to be more goal-oriented and are more flexible regarding the methods used to achieve those goals. Businesses can choose to meet a limit any way it believes is appropriate: rather than being required to install a specific technology, it can choose to reduce its pollution through energy conservation, product or process reformulation, end-of-pipe pollution control, or any other means.

By granting businesses more flexibility in deciding how to reach targets, economic incentives provide an ongoing motivation to constantly seek technological advances that make compliance even cheaper, resulting not only in improved environmental performance but in substantial cost savings as well. One study done for the EPA in 1999 estimated that the potential savings from widespread use of economic incentives at the federal, state, and local level could be almost $50 billion, or one-quarter of the approximately $200 billion per year currently spent on environmental pollution management in the United States.

A More Balanced View of Economics and the Environment

When it comes to harnessing the power of the market towards environmental protection, economic incentives represent only a small piece of potential benefits. Even more groundbreaking and revolutionary is to change the way we look at the market and our natural environment. For this, the emerging discipline called Ecological Economics is a promising step. Ecological Economics is a young and evolving pluralistic discipline that addresses pressing ecological and economic problems within a framework of ecological sustainability, equity, economic efficiency, markets and democracy. It stresses the need to look at the **whole** picture, integrating knowledge across social and natural systems. To learn more, check out the Asia Pacific Environmental Exchange's page on Ecological Economics at **www.a-p-e-x.org/ecolecon/ee_centralconcepts.html.**

In addition to cost savings, innovative environmental strategies also stand to make businesses more competitive.

Market-based approaches to environmental regulation can also ease tensions between the government and industry by removing the confrontational nature of traditional regulations. A report from the Global Environmental Management Initiative (GEMI) in 1999 found that almost all businesses participating in an economic incentive program spoke appreciatively of the spirit of trust and cooperation between government officials and the private sector that utilized these new programs. The implication is that this new spirit of cooperation will lead to more efficient problem-solving and consequently, better environmental performance.

Economic incentives may also be more effective in dealing with smaller and diffuse (non-point) emissions sources which collectively contribute large amounts of pollution. These sources tend to be largely ignored in favor of controlling the pollution from more major sources. The reason is clear—it seems easier to regulate pollution emissions from the large smokestack belching out noxious fumes than it is to deal with the pollution generated from the thousands of households who unknowingly toss their mercury-containing fluorescent bulbs in the regular garbage. The traditional regulatory system, dependent on reporting, inspections, and fines for non-compliance, can be very expensive and burdensome to manage when applied to thousands, or even millions of sources. Deposits on lead-acid batteries and variable charges for solid waste disposal are two good examples of how economic incentives can more effectively manage the large quantity of non-point emissions sources.

Types of Economic Incentives

There are several types of economic incentives but this article will discuss only the most well-known and tested of these: unit-based pricing, environmental taxes and marketable permits.

Unit-based Pricing

The first type of economic incentive is in the form of charges, fees or taxes, or unit-based pricing. These are prices paid for discharges of

Continued on next page...

Economic Incentives

pollutants to the environment, based on the quantity and/or quality of the pollutant(s). In order to be most effective, the charge is levied directly on the quantity of pollution, in the form of an emissions tax or charge. Product charges can occur at different usage points, either as they are manufactured, consumed or disposed.

An excellent example of unit-based pricing is the pay-as-you-throw (PAYT) initiative, already recognized as a clever method of managing solid waste. These types of programs are already at work in 3,000 communities nationwide. Rather than paying one flat fee for solid waste disposal, residents in PAYT communities pay per pound or gallon of garbage disposed. A pay-as-you-throw program offers residents an incentive to recycle and reduce waste, helps communities cover solid waste costs through accurately charging residents for solid waste services, and gives residents more control over their garbage bill and by charging only for the services they use. PAYT could also be changing households' purchasing decisions toward products that come with less packaging.

Environmental Taxes

The second type of market-based environmental tool comes in the form of environmental taxes. The basic premise is that whatever is taxed, we automatically get less of, so instead of focusing our taxes on activities we deem good for society, such as income or savings, we should tax things we want less of, like pollution or waste. Our current tax system sends a message to businesses and consumers that seriously degrading our natural resources is acceptable because there is no cost associated with these activities. In contrast, an environmental tax shift would change that by providing incentives for better environmental management, while continuing to raise revenue at the same (or higher) levels, and reduce other taxes, on income and labor for example, that could in turn stimulate our economy.

Preliminary experience with market-oriented environmental taxes abroad offers much hope. Countries from Canada to China have levied thousands of environmental taxes, on everything from gasoline and pesticides to sulfur and carbon emissions. Only a few dozen standouts have been implemented with tax rates high enough to do much environmental good, but these few have provided evidence of the effectiveness of the approach when properly pursued. In Britain, for example, excise duties have been adjusted so that the price of leaded gas has risen increasingly, relative to the price of unleaded. Partly as a result, lead emissions from the exhausts of British cars fell by 70% in the decade to 1990. When Sweden introduced a charge of $6000 per ton on nitrous oxide emissions from power stations in 1992, average emissions fell 35% within two years. A Swedish tax on the sulfur content of diesel fuel resulted, within 18 months, to a ten-fold increase in the share of "clean" diesel in total diesel consumption.

Economic Incentives At Work in the Northwest

♦ The Lower Boise project, initiated by the U.S. Environmental Protection Agency-Region 10 and Idaho Department of Environmental Quality, examines how effluent trading can help improve water quality and lower the overall cost of meeting pollutant-reduction objectives established by water quality management plans known as Total Maximum Daily Loads (TMDLs). Participants in the project include federal, state, and local agencies with water-quality responsibilities, agriculture, municipalities, industry, and the environmental community.
Source: www.deq.state.id.us/water/tmdls/lowerboise_effluent/lowerboiseriver_effluent.htm

♦ The Public Benefit Rating System is a land tax program in Jefferson and King Counties, Washington. This innovative system determines property taxes on a point system that rewards property owners with a lower tax rate if they preserve or restore open space features, such as salmon and wildlife habitat and stream buffers. The incentive of a lower property tax promotes a disincentive to exploit the land's development potential. Source: http://splash.metrokc.gov/wlr/lands/incentiv.htm

Economic Incentives

Marketable Permits

Another market-oriented environmental policy is marketable or tradable permits, also referred to as a "cap-and-trade" system. These are similar to charges and taxes but differ in that they operate by fixing an aggregate quantity of emissions rather than charging a price for each unit of emissions. The rationale is based on setting an absolute quantity of pollution to be allowed, and then giving or selling polluters rights, or "permits", to pollute up to that given limit. Polluters can trade these permits with each other if they wish, treating them like any other commodity in the marketplace. Those who can clean up effectively and cheaply can then make money by selling spare permission to pollute to those for whom cleaning up would be more expensive. The key point is that tradable permits can allow governments to set the precise amount of pollution that they are prepared to allow: something they would do with regulation, but could not do with a tax. Environmental groups could also, in theory, buy up permits, "retire" them, and thus reduce the amount of pollution allowed.

The most successful example of tradable permits has been in the overwhelming success of the Clean Air Act amendments in 1990. An ambitious tradable permit system was created under which more than 100 large coal-fired power plants were given initial emissions reductions. The goal was to reduce emissions of sulfur dioxide by 50% in the eastern half of the United States. These facilities were given the ability to purchase excess emissions reductions generated by other plants that found it easy to reduce their sulfur dioxide, along with the choice of meeting their emissions reductions targets themselves. This cap-and-trade approach resulted in sulfur dioxide reductions that have been both larger and faster than required by law. Furthermore, the annual savings to electricity ratepayers nationally (compared to the previous traditional approach) range from 50-80%, amounting to savings of $1-6 billion annually.

Similar cap-and-trade permits are being used in state and local governments nationwide to reduce other types of pollution. One such project in the Pacific Northwest is the pollutant trading system in Idaho, which uses economic incentives to lower pollution emissions into the Boise River.

All in all, well-designed economic incentives offer much promise in both appealing to a business's desire for flexibility and fulfilling society's desire for environmental protection. Achieving environmental goals through the use of price signals and similar incentives, economic incentives systematically change the behavior of businesses by changing the signals they receive in the economy. For more information on the subject of Economic Incentives, including an extensive list of online resources, check out PPRC's new Topic Hub at www.pprc.org/hubs.

What Can P2 Programs Do?

Inspired by the success of market-based incentives, PPRC brainstormed some creative ideas for P2 Progams. Here are a few ideas we came up with:

- ***Negotiate a flat-rate environmental liability premium reduction*** with insurance companies for businesses that achieve a certain level of environmental performance
- ***Pay hazardous waste pick-up fees*** for businesses that move from Large Quantity Generator to Small Quantity Generator
- ***Offer a tax credit to those who invest in P2 equipment.*** Similar to Oregon's Business Energy Tax Credit, generate funds by taxing each 1,000-lb. unit of generated hazardous waste
- ***Conduct free HAZWOPER training*** for businesses that move from Large Quantity Generator to Small Quantity Generator
- ***Help companies develop an intra-company "cap-and-trade" system.*** Set a hazardous waste quantity cap for each department or plant and allow them to trade the permits. Develop a generous reward program for those departments that perform well
- ***Use a carrot AND a stick.*** Publish a yearly feature column or advertisement in local community newspapers and industry trade journals, touting an industry's top environmental performers as well as the top polluters
- ***Develop a pay-as-you-pollute initiative***. Just as PAYT programs have stimulated better solid waste management in communities, a similar "pay-as-you-pollute" program could be implemented in managing hazardous waste in P2 efforts

Good News in the Northwest

GreenStar Holds Largest E-Waste Recycling Event in the Country

For two days in May 2004, Green Star, a leading Alaskan environmental non-profit organization that provides direct technical assistance to businesses, transformed a former FedEx warehouse in Anchorage, Alaska into a recycling oasis. Since Alaska has had no previous convenient recycling options for business or residential electronics, Green Star felt that the event should meet the needs of both sectors of the community. By including both businesses and households in the collection event, they offered a unique situation, compared to most other collection events across the country.

The first Electronics Recycling Event was initiated by Green Star last year in response to the increase of electronic waste in the community. This year strategic planning and increased sponsorship made the 2004 Electronics Recycling Event a grand success. Special efforts were made by businesses and households alike to deliver electronics from outlying communities, some over 600 miles away, like Fairbanks, Seward, Glennallen, and Ketchikan.

Businesses came out on May 7th, while caravans of householders made their drop-offs on May 8th. Pallets, forklifts, forty-foot trailers, and over 200 volunteers aided Green Star in more than **doubling** their overall collection from the previous year. Participants waited in lines for hours for a chance to unload their burdens of televisions, computers, monitors, copy machines, VCRs, DVD players, phones, fax machines, camcorders, microwave ovens and much more. Once

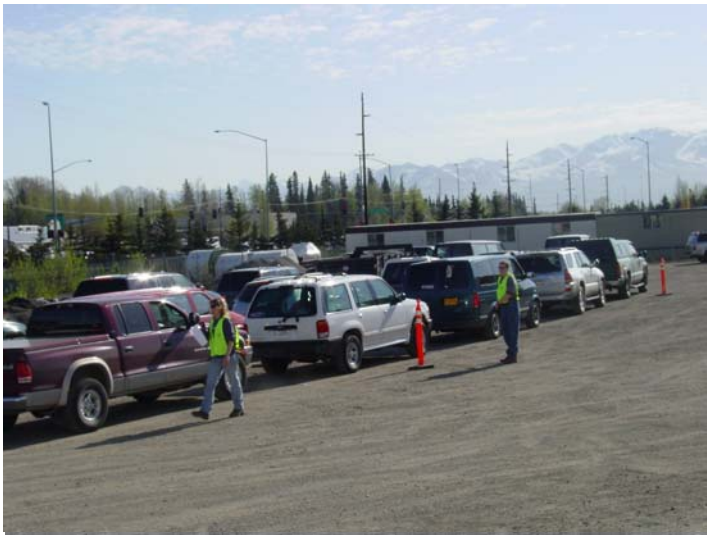
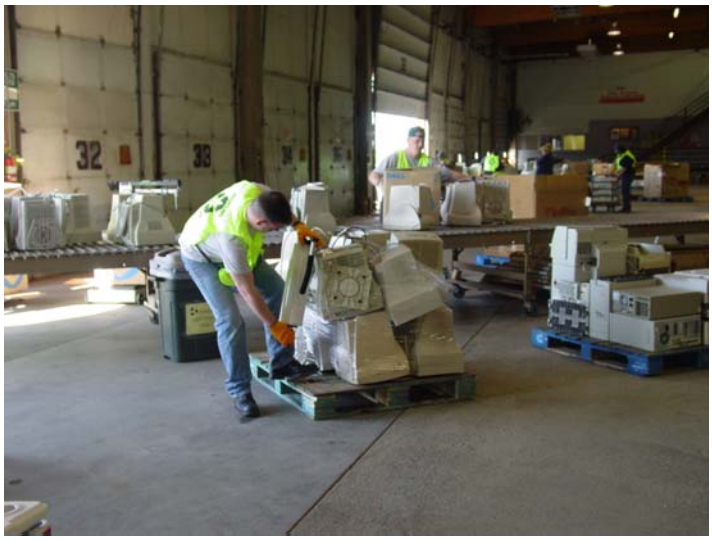


Photo: Cars line up before opening



Volunteers palletize electronics

the electronics were unloaded, sorted and palletized by volunteers, they were delivered to the Port of Anchorage where they set sail for Total Reclaim Inc. in Seattle, WA. Overall, 251 organizations and 1,445 households participated in the event bringing in a grand total of **305 tons** of electronics destined for recycling.

Grants, sponsors and volunteers offset the significant organizational, transportation and recycling costs for the event, and Green Star was able to offer the services free to households because of generous grant and sponsorship funding.

The Anchorage Landfill no longer allows businesses to throw away old electronics and strongly discourages electronic waste by householders. Green Star's event provides a once-a-year opportunity for commercial electronic recycling in Alaska at less than half of market cost. Further, the event enables businesses, non-profits and families to collectively prevent the dumping of hazardous materials like lead, cadmium, barium, chromium and mercury from discarded electronics into the local ecosystem.

This new section of *P2 Northwest* will highlight an exciting project or organization. If you have some great ideas of projects we should highlight in our next publication, please email Christine Guiao at cguiao@pprc.org. She'd love to hear from you!

News Digest

Washington Ecology Proposes Tightening Rules for Waste Handlers

When EPA took over CleanCare Corp., a failed Tacoma hazardous waste handler based in Tacoma, they found a dangerous combination of leftover hazardous waste: 1.6 million gallons of used oil, solvents and other risky chemicals in leaky drums and storage containers. Cleaning up this toxic mess has cost taxpayers more than $5.5 million. Unfortunately, this is not the first time this has happened: other Washington waste handlers have gone out of business and left behind costly cleanups, with the cleanup bill paid by Washington taxpayers.

To prevent future situations from happening again, the Washington State Department of Ecology proposed rule revisions that would require all hazardous waste recyclers and used-oil processors to plan for closure, provide a way to pay for it and carry liability insurance for spills or other emergencies. It would also give Ecology the authority to ask a judge to shut down businesses that violate hazardous waste handling laws. For more information, see www.ecy.wa.gov/news/2004news/2004-143.html.

Northwest Energy Efficiency Alliance Launches New Industrial Sector Initiative

The Board of Directors for the Northwest Energy Efficiency Alliance recently allocated $11 million to fund an Industrial Sector Initiative that will work with Northwest industries to change business practices around the management of energy and energy efficiency. The Alliance will target companies in the food processing and pulp and paper industries with plants located in the Northwest.

The goal of the initiative is to make systems-oriented, energy efficiency improvements a more integral part of decision-making and business practices at both the corporate and plant levels. In addition, the effort will work with industrial equipment and service suppliers to encourage them to market systems optimization services and higher efficiency equipment to their customers. These activities will be coordinated and leveraged with local utilities and a state-level energy efficiency programs. For more information, go to www.nwalliance.org.

Report On Industrial Biotechnology Shows Environmental Impacts

American industry spends billions of dollars annually on technology systems to manage waste and capture pollution emissions. Industrial biotechnology—the use of genetically enhanced microorganisms (GEMs) and enzymes—offers a new cost-effective way to prevent the creation of pollution. The Biotechnology Industry Organization recently released a report titled *New Biotech Tools for a Cleaner Environment*, the first to present national data projections for the positive environmental and energy-saving impacts resulting from this "third wave" in biotechnology.

Using data from the Environmental Protection Agency and the Organization for Economic Cooperation and Development, the report highlights benefits already being realized in several major industrial sectors, including pulp and paper production, textiles, and transportation fuel. For instance, if an industrial biotechnology process is used to bleach paper pulp it can reduce the amount of chlorine chemicals used during production by 10-15%, and, if used industry-wide, it can reduce bleaching-related energy uses by 40%. "Getting P2 results at a reduced cost is the preferred approach to increased environmental protection. We look forward to the huge potential for the responsible use of industrial biotechnology in the future," said Ken Zarker, Chair of the National Pollution Prevention Roundtable. The full report can be found on BIO's web site www.bio.org.

New Data on the Cost of Building Green

A new report offers compelling evidence that if there is any premium associated with building green, it is far less significant than a range of other factors that affect building cost. The paper, *Costing Green: A Comprehensive Cost Database and Budgeting Methodology,* draws on an extensive database of cost information for both LEED and non-LEED projects to compare their costs while normalizing for building type, location, and other factors. The report can be found at www.dladamson.com/publications.html.

Upcoming Events and Seminars

Northwest Health Care Pollution Prevention Conference

This conference, to be held on October 28, 2004 in Boise, ID, will help health care facilities incorporate environmental considerations into day-to-day operations. Participants will learn about pollution prevention solutions that can help hospitals minimize enironmental impacts, save money and maintain-and even enhance-high standards of patient care. For more information contact Liisa Itkonen at Idaho Department of Environmental Quality at (208) 373-0282 or email litkonen@deq.state.id.us.

Greenbuild International Conference and Expo

The US Green Building Council will hold the Greenbuild International Conference & Expo in Portland from November 10-12, 2004. In its third year, Greenbuild International Conference & Expo has become the must-go event for the green building industry. Greenbuild will feature three days of exceptional educational programs, workshops and speakers alongside an expansive exhibit hall and sponsors. Thousands of industry professionals will come together to learn about the latest advancements in green building design, construction, project financing, and building management. For more information on this event, go to www.greenbuildexpo.org.

The Northwest Environment Conference & Tradeshow

To be held in Portland, Oregon from November 16-17, 2004, the Northwest Environmental Conference (NWEC) is the largest, most comprehensive environmental conference and tradeshow in the Pacific Northwest. NWEC's goal is to provide low-cost environmental management training to a broad range of environmental professionals. This year's conference will feature interactive sessions, relevant case studies, controversial roundtable discussions, facilitated breakfast conversations, and plenty of networking opportunities. For more information, check out www.nwec.org.

Principles of Lean Manufacturing with Live Simulation

This one-day seminar, held in Vancouver, WA on November 19, 2004, combines classroom discussion and live simulation to demonstrate the value of Lean Manufacturing. Lean Manufacturing is a whole systems approach that creates a culture in which everyone in the organization continuously improves their facilities, processes and production. Adopting a Lean approach is helping companies become faster and more responsive to customer requirements while using fewer resources. In this introductory course, students will learn how to: reduce cycle time, reduce floor space, reduce inventory, improve cash flow, improve productivity, and stimulate teamwork. For more information, see www.wamfg.org/pages/events.html

pprc *Practical solutions for big environmental issues*

PPRC, a non-profit organization, is the Northwest's leading source of high quality, unbiased environmental solutions information. Through a collaborative approach, we focus on solutions that integrate resource efficiency and environmental health into business, government and communities.

Pollution Prevention Northwest is published three times a year by PPRC. Part or all of the newsletter may be copied. Articles may be reprinted or distributed electronically only in their entirety with written permission from PPRC. Please credit the author (if any), followed by *"Pollution Prevention Northwest,* PPRC." To receive a free electronic subscription, contact PPRC.

Editor: Christine Guiao

If you print this newsletter, please use paper that contains at least 30% post-consumer content recycled fiber.

Telephone: 206-352-2050
Fax: 206-352-2049
E-mail: office@pprc.org
Address: 513 1st Ave. W, Seattle, WA 98119