Environmentally Preferable Printing

A Two-Minute Briefing on Key Business Environmental Issues

The Big Picture

Understanding the environmental impacts of the printed page throughout its life cycle will help companies make environmentally preferable choices when ordering printed documents. Paper that is not made from recycled-content or tree-free fibers takes its toll on the world's forests, and bleaching processes for paper are linked to cancer-causing effluents. Petroleum-based inks, wetting agents, and cleaning solvents used in the printing process produce toxic air emissions. And the process of binding documents typically involves toxic glues and adhesives, some of which can hinder recycling.

The Context

Pollution prevention is nothing new to the printing industry. The five most popular printing processes — lithography, gravure, flexography, letterpress, and screen printing — present an array of pollution problems, primarily associated with the use and disposal of etch baths, solutions, printing inks, and cleanup washes. Because of this, printing facilities are under intense pressure to comply with environmental standards from both federal and local regulators. Water pollution is a key regulatory issue — as waste inks and hazardous effluents from press washes and other fluids are discharged into waterways or sent as sludge to disposal facilities.

Those seeking an environmentally preferable printer can look to the growing number of industry leaders — small and large print shops alike — that have implemented beyond-compliance environmental initiatives. In recent years, these leaders have begun choosing low-emissions paints and solutions, improving the efficiency of operations to reduce waste, minimizing energy consumption, and reducing chemical use or discharges into wastewater. Additionally, a handful of government and nonprofit programs have begun exploring new options for pollution prevention in the printing industry. For example, the U.S. EPA's Design for the Environment Program operates several pilot programs to test new methods of pollution prevention for a number of print processes, including flexography, lithographic printing, and screen printing.

New, cleaner technologies also provide opportunities for greening the printing process. Digital prepress technologies, such as computer-to-printing-plate systems, eliminate the chemical and solid waste resulting from traditional photographic platemaking processes. Some imagesetting products are now designed to eliminate chemicals used with traditional wet-processing systems. Less-polluting inks — including soy- and other vegetable-based inks — continue to improve in performance. Traditional inks with reduced emissions of volatile organic compounds are also available.

Key Players

- **Select large and small printing companies** have taken steps to go beyond compliance to find environmentally preferable printing practices and processes.
- **Leadership companies with in-house printing operations** are finding opportunities to reduce costs and emissions through pollution-prevention and other initiatives.
- **Graphic designers** are leveraging their understanding of the environmental aspects of printing

to design projects in ways that reduce paper use, use more recycled and "tree-free" paper, and avoid design decisions that increase waste and toxic emissions.

- **Print buyers** are asking questions about the way they do business, and looking for ways to reduce the environmental impact of their print projects.
- **State and federal regulators** are requiring printing shops to implement environmental management systems and take steps to reduce emissions and waste.
- **Government agencies and trade organizations** have begun offering technical assistance programs — such as the Great Printers Program — to help printers reduce their environmental impact.

Getting Down to Business

- By switching to a nonhazardous press wash for cleaning its presses, **Applied Graphics** in Wayzata, Minn., has virtually eliminated the hazardous-waste stream at its facility, reducing its hazardous-waste generation from approximately 55 gallons per year to less than one gallon per year.
- **Japs-Olsen Company** in St. Louis Park, Minn., eliminated cleaning rags from its waste stream by installing an automated roller washing system on its presses.
- **Working Assets Long Distance** company prints its phone bills and direct mail on recycled paper with soy-based ink.

The Upside

- If your company prints documents regularly, choosing an environmentally committed printer is **an important component of green procurement**.
- Choosing environmentally preferable paper and inks, and saying so on printed documents, **publicly demonstrates your company's environmental commitment**.
- The **environmental benefits** from greening a large print job can be substantial when they lead to lower waste and emissions.

Reality Check

- **Not all environmentally preferable options work with all printing processes.** Ask your printer which inks and which papers will meet your needs.
- **While the options are out there, sometimes the information is not.** Finding the greenest printer for the job may take some self-education and research.
- **Printers operate on tight margins**, and this greatly limits their ability to invest in new equipment and experiment with new practices.

Action Plan

For print buyers:

- **Consider publishing your document online.** The most environmentally friendly publication doesn't exist on paper at all, and it is now

possible to design and distribute a publication without ever printing it out on paper.

- **Generate a list of printers in your area** and make some calls. Find out if your printer will be able to meet your needs before you commit.

- **Choose chlorine-free paper with post-consumer fiber.** Greening a print job starts before the ink hits the paper. Find out if your printer offers environmentally preferable paper.

- **Avoid foil stamps, varnishes, and other coatings** that may hinder recyclability. An exception: Consider coatings or lamination if means a printed piece will be reused, thereby cutting paper use over the long term.

- **Use paper wisely.** Print on both sides. See if you can turn a brochure or other document into a "self-mailer."

- **Think green ink.** Ask your printer about the possibility of using low-polluting (with a VOC content of less than 5%) or recycled inks. Also, vegetable-based inks are preferable to petroleum-based inks because they contain considerably lower VOCs. Co-op America recommends inks with vegetable-oil levels specified in the Vegetable Ink Printing Act of 1993 (S.716): 40% for news inks, 20% for sheet-fed inks, 20% for forms inks, and 10% for heat-set inks.

- **Package your document wisely.** Bindings, adhesives, foils, and plastic bags commonly used in printing or packaging printed material can render paper unrecyclable at most facilities.

- **Try to consider your printer as a partner in environmental excellence,** rather than an adversary. Keep in mind that many of these ideas will be new to your printer, and he or she may not be immediately receptive. Patience, tact, and understanding will be required.

For printers:

Research Triangle Institute recommends a number of procedural changes aimed at preventing pollution that apply to any method of printing.

- **Train employees** on waste reduction and hazardous-waste management.

- **Schedule jobs** according to increasing darkness of ink color.

- **Cover reservoirs and containers** to reduce solvent evaporation.

- **Employ systems** for recovering and reusing spent inks and solvents.

- **Implement an environmental management system** to ensure that continuous environmental improvement is a part of your operations.

Leads

For print buyers:

- **Soy Ink Information Center** — *www.soyink.com*

- **Environmental Choice Printing Services** — *www.environmentalchoice.com/Company.cfm?group=93&cat=36*

- **ReThink Paper Smart Printers** — *www.edf.org/programs/Alliances/GreatPrinters*

For printers

- **Printers National Environmental Assistance Center** offers conferences, fact sheets, Web links, and two listservs offering technical and regulatory assistance. — *www.greenbiz.com/reference/organizations_record.cfm?LinkAdvID=681*

- **John Roberts Company Environmental Leadership Pilot Program for Printers** helps small print shops in the U.S. Great Lakes region implement and improve environmental management systems. — *www.greenbiz.com/reference/mentor_record.cfm?LinkAdvID=11706*

- **Pollution Prevention for the Printing Industry**. Research Triangle Institute's 28-page guide offers detailed information on reducing waste and emissions in imaging, press operations, and wastewater treatment and disposal. — *www.greenbiz.com/toolbox/tools_third.cfm?LinkAdvID=4815*

- **PPRC Printing Industry Resources** — *www.pprc.org/pprc/sbap/printing.html*

The Bottom Line

Behind every printed page is an array of chemicals, wastes, and emissions — many of which can be avoided through informed choices and good management practices. Environmentally conscious companies will select paper, inks, and printers for their projects with environmental performance in mind.