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[Swimming Upstream With Eyes Wide Open](#)

By [Peter Nowack](#) on June 9th, 2010

When we think about the environmental implications of our actions, processes, and purchase decisions, we have a tendency to look downstream. That is to say, we focus on what happens in our wake – on such things as how much waste has been generated, what volume of VOCs have been emitted, and how much energy has been consumed. Downstream impacts are easy to grasp, because they are directly related to one's level of activity.

But each of our actions, processes, and purchase decisions has upstream implications as well. And while each of our actions may be responsible for only a small upstream impact, when taken in aggregate these impacts can be quite substantial. ([There's a great video clip](#) on You-Tube that shows the impact of one's daily cup of joe.)

Take, for example, a decision to use certified paper for a print run of 20,000 24-page brochures. That decision, creates a ripple in the value chain that, ultimately, provides a bit of incentive to a forest landowner to manage that estate in a more environmentally responsible manner. That responsible management contributes positively to the protection and enhancement of multiple forest-based values, including clean water, soil conservation, habitat protection, conservation of biodiversity, and so forth.

The same holds true for one's choice of electrical energy sources. The electric current that flows out of the wall socket is generated through a wide range of technologies, and some of these, while relatively inexpensive to the customer, are costly to the environment and to human health and welfare. The "standard mix" typically contains a high percentage of energy generated by burning coal, a dirty fuel in terms of greenhouse gas and particulate emissions. Acquiring coal requires mining, which results in landscape-scale transformation of the terrain and, all too frequently, compromised health, injury or death for miners. From a green point of view – and from a value of life perspective – the decision to stick with a high-coal source of electricity has a very high upstream price tag.

Decisions about the brightness of printing paper also carry upstream implications. Up until the late 1990s, elemental chlorine gas was the chemical of choice for bleaching paper in the kraft pulping process. Chlorine makes paper fibers brilliantly white, but when it bonds with carbon-based compounds (such as lignins), it produces dioxins. Dioxins, to put it mildly, are not so nice to be around. They don't break down in water, and bio-accumulate in the food chain, eventually reaching humans and contributing to cancers and damage to endocrine, reproductive, nervous and immune systems.

Pulp producers in North America have phased out elemental chlorine as a bleaching agent, shifting instead to the more benign compound chlorine dioxide to produce brightness in “elemental chlorine free” (ECF) pulp. According to **Conservatree**, using chlorine dioxide bleaching reduces the potential for the creation of dioxins by more than 90%, but cannot completely eliminate them. The **Worldwatch Institute** (Paper Cuts, 1999) estimated that a mill using standard chlorine bleaching will release about 35 tons of organochlorines (dioxins and chlorinated toxic pollutants) per day, while an ECF mill will release 7-10 tons per day.

There are other bleaching options, including oxygen, peroxide and ozone bleaching systems. Pulp made using these technologies is known as Totally Chlorine Free (TCF). TCF pulp accounts for just a small fraction of the world’s kraft pulp production, and detractors of the process say that making TCF pulp requires more trees than does the ECF process.

While ECF processes are now used in about 75% of the world’s kraft pulp production, chlorine gas continues to be used by some pulp manufacturers (accounting for as much as 20% of kraft pulp production, according to a 1995 study by Australia’s Commonwealth Scientific and Industrial Research Organization). Pulp being a globally traded commodity, due care is warranted to ensure that paper procured from offshore sources is, at minimum, elemental chlorine free. Looking upstream when making decisions about paper brightness can further incentivize technologies that can lessen the pulp industry’s dependence on chlorine in any form.

1. **2 Responses to “Swimming Upstream With Eyes Wide Open”**

2. By **Peter** on [Jun 11, 2010](#) | [Reply](#)

To the kind printer who emailed to ask for permission to excerpt from this article for the company newsletter — feel free, with attribution. Sorry I couldn’t give you a more personal response – my blackberry ate your email message.

3. By **Pat Berger** on [Jun 14, 2010](#) | [Reply](#)

When controlling the upstream the downstream wake becomes a non issue. Look at every consumable you use. What do they cause you to do or use to control them or their affluent? If you use a any type of product that requires air makeup that is a huge upstream problem that consumes large amounts of energy and pollutes in multiple ways. For instance any VOC that must be removed or incinerated from your facility because of poor air quality or exceeding part per million requirement is One giant upstream energy waster. The alternative is non hazardous* low VOC count products that doesn’t require air makeup.

Inks made from petroleum almost always require hazmat disposal. Inks that are properly made from renewable sources and the correct pigments will not require hazmat disposal along with ink consumption reductions of over 25%.

When you can print manufacture using products that have virtually no upstream problems why wouldn’t you?

As far as I know there are only 2 companies in the world that manufacture such consumable pressroom products.

Post a Comment

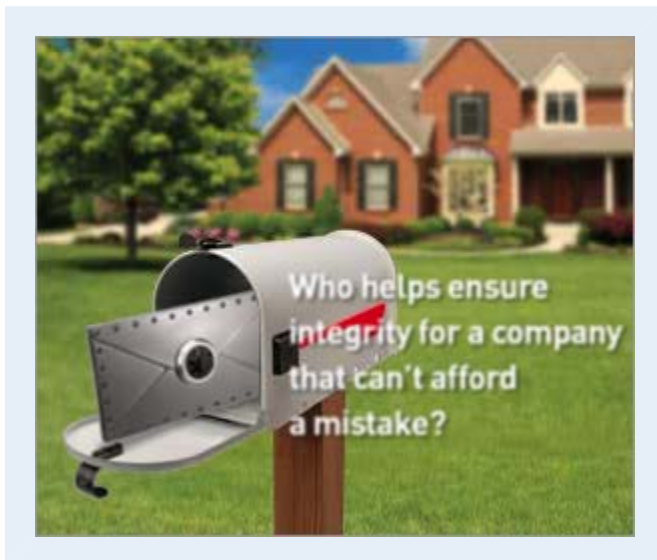
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- [ThePaperLifeCycle.org – Encyclopedic? Yes. Exhaustive? No.](#)

• About Going Green

Going Green contains stories, reports, commentary, and interviews that highlight how a company can reduce its environmental footprint and become more sustainable.

Managing Editor, [Peter Nowack](#), is a veteran strategist, marketer and writer. His consultancy, **PrintLeadership**, offers sustainability issues guidance and environmental marketing to the graphic communications industry.

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- [Peter Nowack](#) on [New FSC Labels: Less is Definitely More](#)
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- [Green Manufacturing Expo
September 28-29, 2010](#)
- [The Green Marketing Conference
October 6-7, 2010](#)

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