

Reducing Climate Impacts

A Guide for the Book and Newspaper Industries



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Summary of Impacts and Steps to Minimize Impacts

The report that follows, discusses the impacts that producing books and newspapers have on global climate change. The report also discusses steps companies in the publishing industry can take to reduce those impacts. This summary page is intended to highlight the greatest sources of greenhouse gas emissions associated with publishing, and provides the steps that will yield the greatest reductions in climate impacts.

Impacts

Paper Use

For most companies in the book and newspaper industries, greenhouse gas emissions associated with paper use are likely to account for the largest portion of their climate impact. One large publisher calculated that their emissions associated with paper use accounted for 88% of their total carbon footprint. The majority of these emissions are associated with:

- Loss of biomass when trees are cut to use for pulp.
- Energy used to produce the paper.
- Methane released when paper degrades in landfills.

Distribution and Retail

This category includes the energy used to transport books, and a portion of the energy used in retail stores that sell books. In the book industry, emissions from distribution and retail account for just over 14% of total emissions.

Office Energy Use:

The largest uses of energy in office buildings are for heating and cooling, and lighting, which respectively account for 34%, and 30% of the average office's energy consumption.

Steps to Minimize Impacts

Paper Use

- Replacing virgin freesheet with 100% postconsumer recycled paper reduces a paper's greenhouse gas emissions by

37%

- Replacing virgin newsprint with 100% postconsumer recycled paper reduces a paper's greenhouse gas emissions by

50%

- Using FSC (Forest Stewardship Council) certified papers ensures that forests, which help remove carbon dioxide from the atmosphere, are managed according to the best practices.

Distribution and Retail

- Work with suppliers/partners to find innovative strategies for reducing returns, or reducing emissions associated with distribution.
- Consider purchasing offsets for emissions that cannot be avoided.

Office energy use

Lighting

Reduce an office's energy use by up to **25%**

- Replace standard light bulbs with compact fluorescent bulbs.
- Replace T12 fluorescent lights with T8 or T5 fluorescent lights.
- Move work space closer to natural light sources.
- Remove unnecessary lighting.
- Use timers or motion sensors so lights are not on when a room is unoccupied.

Heating Cooling and Ventilation

Reduce an office's energy use by up to **20%**

- Turn down the heat/air conditioning by a few degrees.
- Ensure vents/radiators are not blocked.
- Install energy efficient windows.
- Make sure the thermostat is not in a drafty area.
- Upgrade to an efficient heating, ventilation and air conditioning (HVAC) system that is the right size.

Relative Portion of Book Industry Greenhouse Gas Emissions.

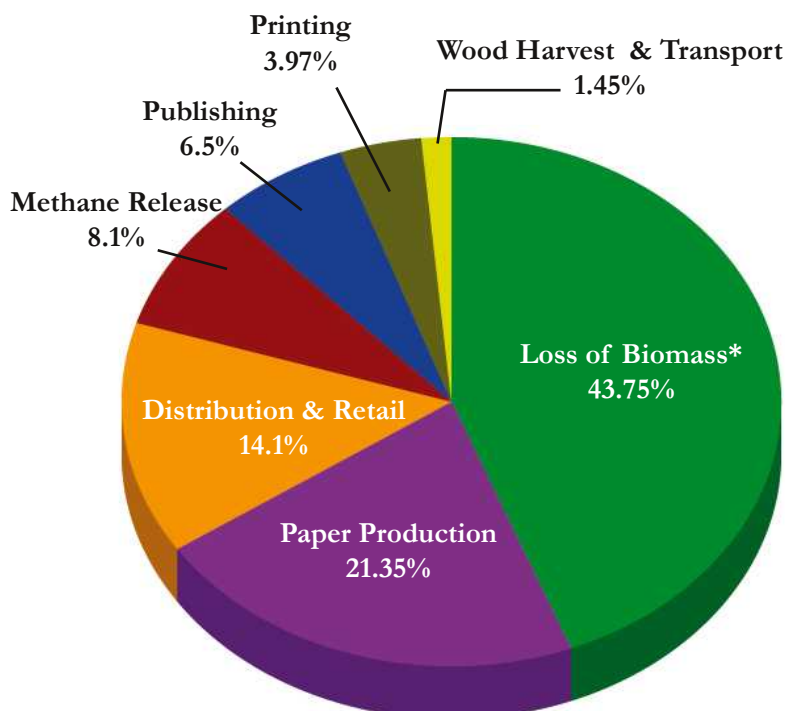


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About Green Press Initiative

Green Press Initiative (GPI) is a non-profit program dedicated to improving the ecological footprint of the paper industry with a special emphasis on the book and newspaper industries. GPI works with publishers, industry stakeholders, and authors to create paper use transformations.

GPI has successfully collaborated with more than 180 publishers, printers and mills in the book sector to bring about significant environmental improvements by eliminating the use of Endangered Forest fiber and maximizing the use of recycled and Forest Stewardship Council (FSC) certified paper.

Recently these efforts have been expanded into the newspaper industry. GPI also co-founded the Environmental Paper Network and currently serves on its board with nine other organizations.

For more information, visit www.greenpressinitiative.org or contact info@greenpressinitiative.org.

You may also call toll free 1-800-588-1990



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Introduction

Global climate change poses one of the greatest challenges in human history. As evident by the assessments of the Intergovernmental Panel on Climate Change (IPCC) and others, there is an overwhelming consensus among the scientific community that deforestation and the release of greenhouse gases (GHGs) into the atmosphere are causing the earth's temperature to increase. In addition to the numerous consequences that are already occurring, if current trends continue, people and ecosystems throughout the world are likely to be impacted at an even greater scale.

The U.S. Book industry releases 12.4 million metric tons of greenhouse gases (carbon equivalent) each year.¹ While the magnitude and scale of this problem may at times seem overwhelming, it is important for individuals, companies, and industries to focus on what they can do to minimize their own climate impacts. This report is designed to be used as a resource for those in the publishing industry who are interested in reducing their climate impact by reducing GHG emissions, and/or offsetting those which they do produce.

Why Minimize Climate Impacts?

One of the most obvious reasons for taking the initiative to reduce GHG emissions is to play whatever role possible in preventing some of the undesirable consequences of an unstable climate. While being a more environmentally responsible company has merits on its own, there is also a strong business case to be made for reducing environmental impacts in general, and specifically for those associated with climate change. In fact, a recent report by Goldman Sachs found that companies considered to be leaders in developing social and environmental policies have outperformed the MSCI (a stock market index of companies from around the world) by an average of 25% since August, 2005, and that 72% of these companies outperformed their peers during the same time period.²

Save Money

Using more energy than necessary equates to wasted dollars. Many of the suggestions provided in the following sections require an upfront cost. However, most will recover that cost through increased energy efficiency within a few months or, at most, a few years. Once costs are recovered, further savings in energy go straight to the bottom line. An excellent example is the savings book printer Thomson Shore generated by installing more efficient lighting. See the case study on this page for more details.

Better, More Efficient Employees

Happy employees are good employees. Many studies suggest that “greening” a building will increase worker productivity

and decrease absenteeism.^{3,4} There is also strong evidence that corporate responsibility programs reduce turnover, and make a company more attractive to job seekers. For example, a survey conducted by the Stanford University Graduate School of Business found that MBAs from North American and European business schools would forgo an average of \$13,700 in wages to work at a company that had a better reputation than its competitors for environmental sustainability.⁵

The Impacts of Publishing

Books and newspapers cause GHGs to be released to the atmosphere throughout their lifecycle. The U.S. book industry emits approximately 12.4 million metric tons of GHGs (carbon equivalent) annually and the average book is responsible for the release of 8.85 pounds of GHGs (carbon equivalent). No study has calculated the average emissions of the newspaper industry, but the UK publishing company the Trinity Mirror calculated that each of their papers, which are printed on 100% recycled paper, are responsible for 0.38 pounds of carbon emissions, while a study in Germany, which assumed 26% recycled content placed the number at 1.54 pounds. The major sources of the emissions are organized into three broad categories: paper, printing and binding, and distribution and retail.

Paper

The paper that a book or newspaper is printed on is likely to be by far the largest contributor to a publisher's GHG

Case Study: Thomson Shore Saving Money Through Lighting Upgrades

In 2005, book printer Thomson Shore replaced all the T12 fixtures in the manufacturing area with T8 style fluorescent fixtures. These fixtures consume half the wattage required to light the plant previously, yet provide up to twice the light output. The cost to change all the fixtures was about \$60 thousand but the annual savings in electricity costs are about \$32 thousand. Because the “illuminator” fixtures used produce less heat, they also reduce the energy necessary for air conditioning, resulting in an additional savings of about \$10 thousand per year.

Thomson shore also uses a heat recovery system, which captures heat generated by machinery, and uses it to help heat the building in the winter. Duct systems have been retrofitted to make use of outside air and use less energy for air conditioning. Thomson Shore is also in the process of replacing their heating ventilation and air conditioning (HVAC) system with one that is more efficient and environmentally friendly.

emissions. As such, the greatest progress towards reducing GHG emissions is likely to result from changes in paper use. For one large book publisher, the emissions associated with paper use accounted for more than 88% of the publisher's total GHG emissions. The emissions associated with paper can further be broken down into the sub-categories below, listed from the most to the least impact as identified by the Green Press Initiative/Book Industry Study Group Climate Impacts and Environmental Trends Report.⁶

Removal of Biomass from Forests

This is by far the largest source of emissions in the lifecycle of most books and newspapers. When trees are cleared they can no longer remove carbon from the atmosphere, and disturbances to the soil also results in a transfer of carbon to the atmosphere. In the case of the book industry, removal of biomass is responsible for 61.22% of total emissions, though a portion (18.6%) is stored in the book itself. Figure 1 illustrates the loss of carbon resulting from logging a forest on a 40 year rotation basis.

Paper Production

Paper production is among the most energy intensive industries in the U.S., and after the removal of biomass is likely to be the largest contributor to the GHG emissions of a book or newspaper. Paper production is the source of 21.35% of a book's total emissions.

Landfill Releases (Methane)

When paper decomposes in a landfill, it releases methane, a GHG which is 21 times more powerful than carbon dioxide in terms of its warming potential. These GHG emissions account for 14.5% of the total associated with the average book.⁷

Harvesting and Transporting the Paper

The emissions associated with machinery used for harvesting wood and transporting wood and paper is relatively small compared to the impacts of removing biomass from the forest, producing the paper, and the emissions that are generated as the discarded paper degrades in landfills. In total, the emissions associated with harvesting (excluding emissions associated with the loss of biomass) and transporting the paper account for approximately 1.5% of the emissions associated with the average book.

Publishing, Printing and Binding

Most of the GHG emissions associated with publishing result from energy use for office buildings, office paper use and employee travel. This accounts for 6.3 % of the total emissions associated with books.⁸ In the book industry, printing and binding accounts for just under 4% of the total emissions.⁹ Most of these emissions are associated with energy to run machinery and for office use.

Distribution and Retail

Paper needs to be shipped from the mill to the printer. Books need to be shipped from the printer to a warehouse, and then from the warehouse to retail stores. Newspapers are delivered to customers all over a region, or in some cases all over the country. In the case of books there are usually returns which require books to be shipped from the retailer back to the warehouse. Almost all of this travel is powered by GHG emitting fossil fuels. The associated emissions are equivalent to 12.7% of the emissions of the average book,¹⁰ and likely represent a larger portion of emissions for newspapers since it is necessary to distribute some of the papers directly to customer's homes.

Fig. 1: Carbon Loss from Old-Growth or Mature Natural Forest Logging.

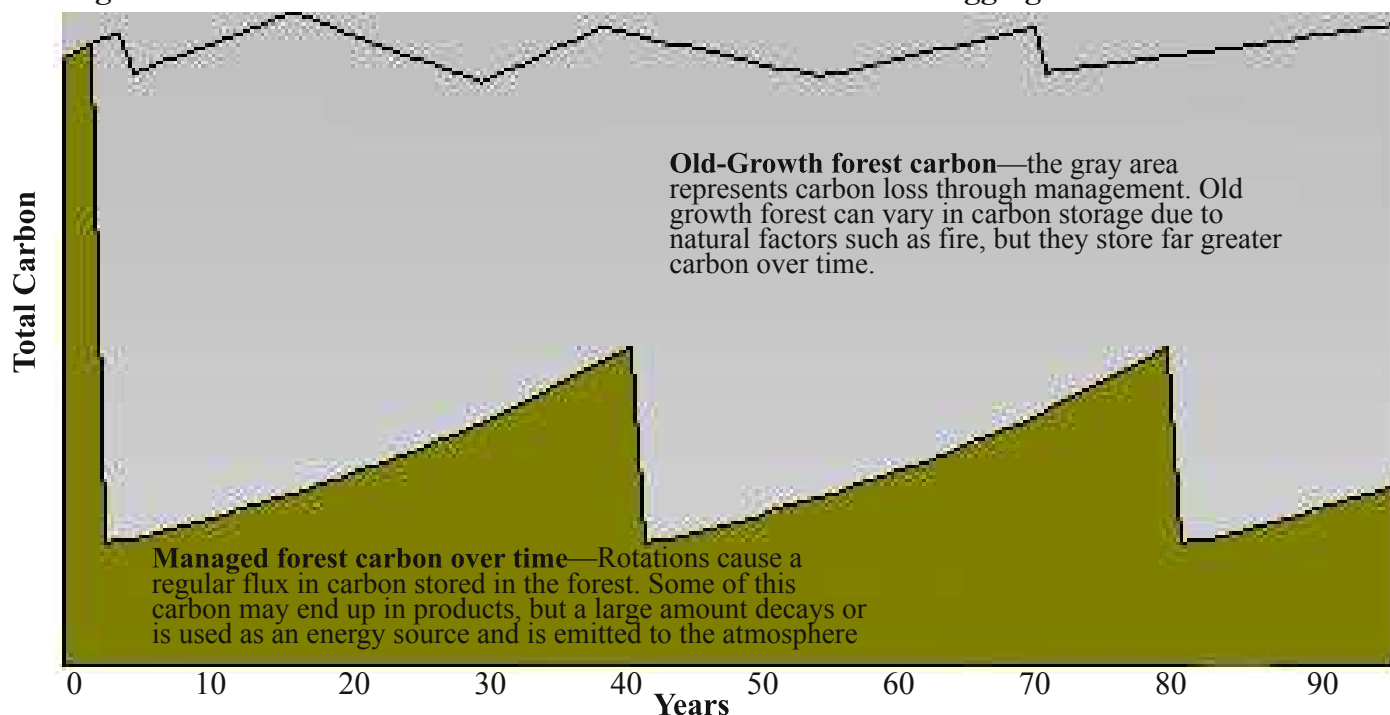
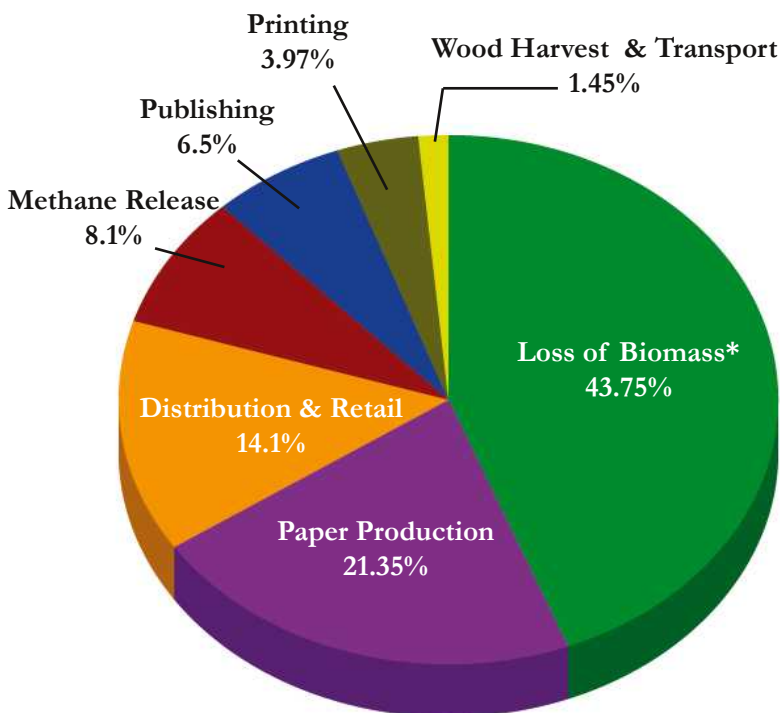


Fig. 2: Relative Portion of Book Industry GHG Emissions.



*Excludes carbon stored in books, which is not immediately released to the atmosphere.

Steps to Minimize Impacts

Reducing Impacts of Paper

Recycled Paper

Maximizing the use of recycled paper may be the easiest way for publishers to drastically reduce GHG emissions. Each ton of recycled freesheet that replaces a ton of virgin freesheet prevents the release of 2,108 pounds of GHGs, while replacing a ton of virgin newsprint with a ton of postconsumer recycled newsprint saves 3,382 pounds of GHGs (carbon equivalent).¹¹ Lists of suppliers of book paper and newsprint containing recycled content can be found at www.greenpressinitiative.org/supplierlists.htm

Protect Endangered Forests

The Earth's forests provide a natural buffer against the impacts of global climate change. Through the process of photosynthesis, trees and other plants remove carbon dioxide from the atmosphere and store it as biomass. It is estimated that approximately 25% of the human-caused increases in GHGs in the atmosphere result from deforestation. Recent studies have concluded that forests in the mid-Atlantic U.S. that have been cleared and then allowed to regrow for 70 years only store half as much carbon as nearby forests that were never cleared.¹² Since it takes a long time for carbon stored as biomass in a forest to

build up, managed plantations where trees are harvested periodically do not store nearly as much carbon as a natural forest.¹³⁻¹⁵

The Forest Stewardship Council (FSC) is widely regarded as ensuring the best practice in forest management, and is the only forest certification system that prevents the clearing of existing forests for the purpose of establishing tree plantations. Thus, in addition to maximizing recycled fiber, increasing the use of FSC or equivalent certified fiber will ensure that the forests we rely on to remove carbon from the atmosphere will be cut in an environmentally responsible manner, and maximize the amount of carbon stored in forests.

Papers that Offset

While using recycled and FSC certified papers will reduce GHG emissions, there are some paper mills that go a step further. As outlined in the case studies on page 9, some mills purchase renewable energy certificates for some or all of the energy that is needed to produce the paper. Choosing these papers for publications, and office use can significantly reduce the emissions associated with paper. For example, Mohawk Papers purchases renewable wind-energy certificates for all the energy used in manufacturing its papers, and Cascades uses some renewable energy for some of their papers. For more information about renewable energy certificates and offsetting emissions see the section on page 7 which discusses the topic in more detail.

Reducing Impacts in the Office

Though the exact proportions will vary depending on location and the type of business, almost 90% of all office energy consumption is used for lighting, heating, cooling and ventilation, office equipment and water heating.¹⁶ As these represent the largest uses of energy, they also present the greatest opportunity for reducing energy consumption, and GHG emissions.

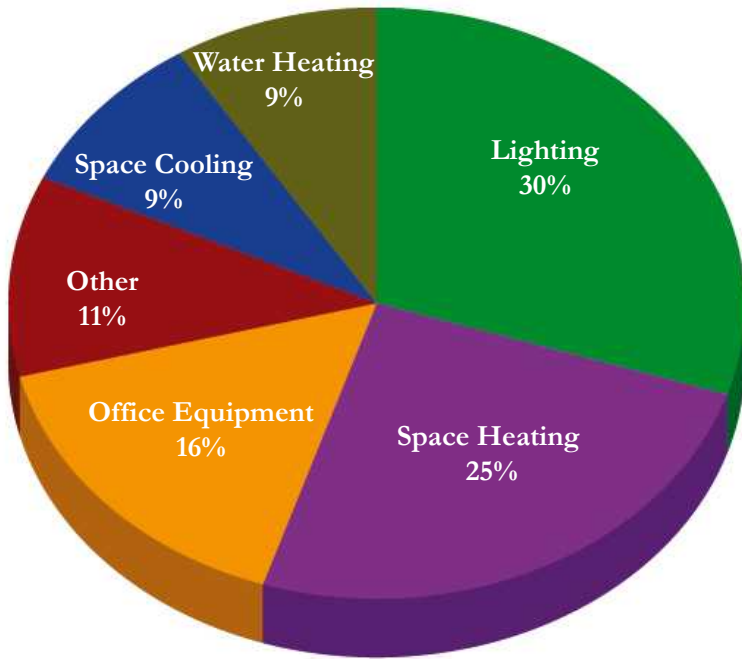
Lighting

It is possible to reduce an office's energy use by up to 22% simply by using more efficient lighting. Outlined below are some steps that can greatly reduce energy

Case Study: Scholastic Sets Targets for Recycled and FSC Certified Papers

In January of 2008 Scholastic announced an environmental policy which sets a target of at least 25% recycled paper (75% of which will be postconsumer) and 30% FSC certified paper by 2012. In addition, the company set a goal of evaluating the basis weight of each project, and reducing the total amount of paper that is used.

Fig. 2: Energy Use for Average U.S. Office Buildings



consumption for lighting. Though some suggestions require a small initial investment, the savings in energy costs will pay for the difference within a few months to a couple of years, and will continue to provide energy savings well beyond that timeframe. See the Thomson Shore case study on Page 3 for an example.

- Replace incandescent bulbs** with compact fluorescent bulbs. They use about 66% less energy, and save \$40 to \$60 per bulb over their lifetime.
- Replace T12 fluorescent lights** with T8 or T5 fluorescent lights. This will require installing new ballasts, but can reduce the energy needs for each light by 50%.
- Use task lighting.** If most of the work in a large room is done at one desk, a small lamp can provide most of the necessary lighting.
- Install timers or motion sensors** so lights turn off in unoccupied rooms.
- Make the most of natural light.** Use less lighting near windows and move furniture so that workspace is closer to natural light sources.
- Remove unnecessary lighting.** Hallways, storage rooms and areas near windows often receive more light than is necessary.
- Make sure lighting fixtures are clean.** Dust can reduce light output by up to 30%. Cleaning fixtures regularly may reduce the need for additional fixtures or lamps.
- Use Light Emitting Diode (LED) exit signs.** Exit signs using LEDs use less than a 10th of the energy of traditional

bulbs, and last for 10 years. They will pay for themselves in 3 months to 4 years.

- Use efficient exterior lighting.** Use compact fluorescent lights, or high pressure sodium lamps for exterior lighting (special compact fluorescent lights are required for outdoor use if temperatures drop below 40 °F). Make sure exterior lighting is turned off during the day.

Heating ventilation and air conditioning (HVAC)

Depending on climate, a HVAC system can account for nearly half of an office's energy use. Following all the recommendations below can result in a reduction of up to 20% of an office's total energy use.

- Adjust the thermostat** to 76 °F (or above) in the summer and 65 °F (or below) in the winter.
- Don't heat areas that don't need heating.** Turn down the heat in storage areas and corridors where people don't spend much time. If there are parts of the building where a lot of physically demanding work is done (i.e. loading/unloading boxes), workers may prefer that the heat is turned down there as well.
- Install energy efficient windows.** They can reduce heating/cooling costs by 15%.
- Ensure that the thermostat is not in a drafty area.** This will prevent the heating/cooling system from working harder than it needs to.
- Keep furniture clear of vents and radiators** to ensure proper circulation.
- Use an Energy Star Approved Heating Ventilating and Air Conditioning (HVAC) System.** About 25% of rooftop HVAC units are oversized and use more energy than is necessary. Upgrading to a more efficient HVAC system that is the appropriate size can reduce energy use by up to 40%. This can save \$3 to \$4 per square foot of office space over the lifetime of the system.

Recycle/Buy Recycled

As mentioned above, recycled paper requires less energy to produce than paper made from virgin fiber. This is as true for office paper as it is for the paper books and newspapers are printed on. Using 100% postconsumer recycled paper in printers, copiers and fax machines, will save 2,108 lbs of GHG emissions (carbon equivalent) per ton that replaces non-recycled paper. These papers are readily available. A list of some retailers selling recycled office papers is available at:

www.conservatree.org/public/localsources/nationwide.html

It is also important to recycle rather than throw away

Case Study: Random House Goes Beyond Paper

In addition to developing a policy to use at least 30% recycled paper by 2010, Random House has taken on additional projects to combat climate change. In their offices in New York, Random House exchanged 4,000 light bulbs with more efficient bulbs, adjusted the temperature control in the building, and sourced 15% of their electricity from wind power. In January 2008, this building was awarded LEED (Leadership in Energy and Environmental Design) certification by the U.S. Green Building Council. Random House also made use of lower wattage bulbs for 1,500 bulbs in their warehouse and installed sensors and timers to turn off the lights when they are not needed.

papers you no longer need. This helps to maintain the supply of, and support the infrastructure for recycled paper. Companies that truly care about their impacts on climate change should also ensure that bottles/cans are recycled. Recycling bins should be placed throughout the office to encourage higher rates of recycling and management should make it clear to employees that recycling is important to the company.

Reduce Waste and Maximize Efficiency

•**Only print when necessary.** It may be possible to read reports, orders, emails, etc. on the computer screen instead of printing. Manuscripts and proofs can also be read and sent electronically saving emissions associated with both paper use and transportation. Consider purchasing/using software that will allow you to use less paper. Some book publishers have reported significant reductions in paper use associated with inventory and accounting by using electronic data interchange (EDI) software. Unitech EDI is a company that focuses on EDI solutions for the book industry. For more information see:

www.unitechedi.com

•**Set printers to automatically print double sided.** This will cut your paper costs in half.

•**Use washable plates, cups,** and other office items that are often disposed after a single use.

Transportation

All businesses rely on some form of transportation, whether it is shipping goods to a warehouse or customers, traveling for a meeting or convention, or employees using cars trains and buses to get to the office. Companies that can make use of the most efficient forms of transportation will have relatively lower GHG emissions.

•**Minimize travel.** While some travel is always necessary, with the technology that is available today, significant amounts of travel can be avoided. Documents can be emailed instead of mailed (this also conserves paper if the recipient reads the document on the screen), conference calls and video conferencing can eliminate the need for some meetings, and technologies are available that may make it possible for some employees to work from home, entirely eliminating the need for a commute.

•**Provide incentives for efficient commuters.** Provide incentives for employees who walk, ride a bike, carpool, or take public transportation to work the most days each week or month. Ensure that there are bike racks near the building, and provide a place for employees who walk/ride a bike to work to change and possibly shower after arriving.

•**Increase the efficiency of shipping.** Some companies, including Barefoot Books and Chelsea Green have developed innovative programs to reduce the number of books that are returned. These efforts are highlighted in the case studies section below.

Case Study: Chelsea Green and Barefoot Books reducing shipping Impacts

Chelsea Green's Green Partners Program

In an effort to minimize returns and environmental impacts, Chelsea Green has established a "Green Partners Program" with booksellers. Participating booksellers receive a discount of 3% to 5% and receive free carbon neutral shipping (offsets provided by the publisher). Among other requirements, to be included in the program stores must agree to purchase books on a non-returnable basis, and have a display highlighting books about sustainable living for at least one month each year.

Barefoot Books' Stallholder Program

In recent years, Barefoot Books has moved away from selling books through the big retailers, and has instead focused on direct marketing. Many of the books they sold were returned, which meant a lot of extra shipping. Many of these returned books were also damaged meaning that they couldn't be resold. Now, in addition to selling books directly from their website, Barefoot uses stallholders who work from home to sell books in their community.

Offsets and Renewable Energy Certificates

Even the most efficient companies are still using some energy, but that does not mean that they cannot further reduce their impact on climate change. Purchasing renewable energy certificates or offsetting GHG emissions



is a great way to minimize the impact of emissions that do still occur. When a company or individual offsets GHG emissions, it acts to sequester or prevent the emission of a certain quantity of GHGs. This can either be done directly by the company/individual or a third party can be hired to offset the emissions. There are many ways to offset emissions, but the best methods include protecting forests that would have otherwise been cut and supporting renewable energy programs.

Another way to reduce the environmental impacts of the energy you do use is to purchase renewable energy certificates (RECs). Purchasing RECs is in essence purchasing the environmental benefits that result from energy produced using wind, solar, or other forms of renewable energy. The cost of RECs will vary depending on a number of factors including the source of the renewable energy generated, but usually falls within the range of 1.5 to 5 cents per kilowatt-hour. Though the actual electricity delivered to the customer may not have been produced from a renewable source, the purchase of the RECs allowed an equivalent amount of energy to be produced with renewable sources and has the effect of offsetting the emissions of the energy used. For more information about purchasing renewable energy certificates visit:

www.eere.energy.gov/greenpower/markets/certificates.shtml

Are all offsets and RECs the same?

The answer to this question is no. There is no legal framework in the United States defining what qualifies as a legitimate offset. As such, when purchasing offsets or RECs, it is important to consider the reputation of the company or organization providing the offset, the mechanism by which the offset or REC is generated, and the concept of additionality. If the project that is funded in exchange for the offset or REC goes above and beyond “business as usual” than it is considered to be additional. Addressing additionality will ensure that you aren’t just paying someone for a project that would have happened anyway due to economic incentives or legal mandates. Native Energy, one supplier of additional offsets and RECs explains the idea of additionality in more detail at:

[www.http://www.nativeenergy.com/pages/additionality/38.php](http://www.nativeenergy.com/pages/additionality/38.php)

Case Study: Paper Companies Using Renewable Energy

Cascades Papers Using Biogas

Cascades has invested more than 1.8 million dollars in a system that will capture methane from a landfill that would otherwise be burned at the site of the landfill. The methane is piped 8 miles to the Cascades mill, where it is used as fuel to generate energy. The methane provides 75% of the mill's thermal power needs, and is also used to help heat the building in the winter. As a result Cascades has reduced their annual carbon dioxide emissions by 540,000 tons, and though Cascades has to pay for the gas to be stored and transported, the project has reduced their energy spending by 30%.

New Leaf Paper Generated From 100% Renewable Sources

In February of 2008, New Leaf Paper became the first paper company to produce 100% of their paper with green-e certified renewable energy certificates. Their commitment to purchase a minimum of 5,548,644 kilowatt hours of green-e certified electricity annually is equivalent to the amount of energy necessary to power 530 U.S. homes for a year and will conserve a quantity of GHG emissions equivalent to removing 675 cars from the road for a year.

Mohawk Papers Powered by Wind

In June of 2007, Mohawk fine papers increased its purchase of wind generated RECs, to 100,000,000 kWh per year. This is equivalent to 100% of the energy used at its New York and Ohio facilities. Mohawk has also partnered with the Environmental Protection Agency's Climate Leaders Program and has made a voluntary commitment to reduce GHG emissions. They are currently studying their GHG emissions to establish a baseline and will set goals for reduction once this baseline is determined.

Green-e, a non-profit program that certifies renewable energy certificates has a website which provides listings of local companies that can provide renewable energy and RECs. These lists are available at:

www.green-e.org/base/re_products?cust=b

Tree Planting

Trees naturally remove carbon dioxide from the atmosphere and store it as biomass. While in some situations planting trees can benefit people and ecosystems by increasing biodiversity, reducing erosion, and promoting economic development, offsetting GHG emissions by planting trees is highly controversial for a number of reasons. In some cases the term "reforestation" is used to describe the establishment of monoculture tree farms which do not support the biodiversity of a natural forest, or otherwise function like one. Tree planting is also a controversial mechanism for offsetting GHG emissions, because if the trees that are planted are cleared, or burned in the future, the carbon they store will be released back to the atmosphere. There is also strong evidence that planting a new tree will not have the same benefits to the climate as leaving an existing tree standing. A recent study at Ohio State University concluded that a forest that was cleared, replanted and allowed to grow for 70 years, stored only half as much carbon as a nearby forest that had never been disturbed.¹⁷ Because of these controversial aspects of tree planting, it is recommended that other mechanisms (such as, supporting wind or solar energy, or the capture of biogas) be used to offset GHG emissions.



Case Study: New World Library Using Solar Power

New world library is using solar panels on the roof of their office building (shown above) to generate electricity. It is estimated that the use of solar energy reduces their electricity bill by approximately 35%, and with the available tax credits, it is expected that they will get a full return on their investment in 10 to 12 years. As New World Library's associate publisher Munro Magruder stated "Unfortunately, our business is one that depletes the earth's resources. While printing as many of our books as possible on 100% post consumer-waste recycled paper is the main way we attempt to offset that, using solar energy for our office is another effective way to help us reduce our footprint on the planet."

Calculating Your Greenhouse Gas Emissions

Not all GHGs have the same effect on the earth's climate. For example, a ton of methane in the atmosphere will trap 21 times the amount of heat as a ton of carbon dioxide. To account for this, GHGs are assigned a Global Warming Potential (GWP) in relation to the heat trapping capacity of carbon dioxide. Thus carbon dioxide has a GWP of 1 while methane has a GWP of 21. Using GWPs allows a variety of GHGs to be calculated in terms of their "carbon equivalent" and quantifies the total impact of the emissions rather than just the quantity.

As with financial accounting, accounting for greenhouse gas emissions works best when the same set of generally accepted rules are followed by all players. Of such frameworks, the Greenhouse Gas Protocol is by far the most widely used for calculating GHG emissions. Following the guidelines set forth in the protocol will ensure complete and accurate accounting of GHGs and will likely be required for any form of present or future emissions trading program. For the complete Greenhouse Gas Protocol Corporate Accounting and Reporting Standard see:

www.ghgprotocol.org/files/ghg-protocol-revised.pdf

Green Buildings:

Buildings use a lot of energy and electricity. According to the EPA, buildings use 39% of all energy in the United States, and are responsible for 38% of the country's GHG emissions. Modifying or constructing buildings to make better use of natural light, improving insulation, and using recycled, renewable and locally sourced construction materials are just a few choices relating to building design that can minimize GHG emissions. It is also possible to generate renewable electricity on site with solar panels or windmills (for an example, see the New World Library case study on the previous page). Resources for businesses wishing to reduce the environmental impacts of new or existing buildings are available at the U.S. Green Building Council website:

www.usgbc.org/DisplayPage.aspx?CategoryID=19

The Time to Act is Now

While producing books and newspapers generate large quantities of GHG emissions, there are many steps those in the industry can take to minimize these emissions and their resulting impacts. These include using environmentally responsible paper, reducing energy use in buildings, using renewable energy, and offsetting



The Hearst Tower was the first building in New York City to achieve Gold LEED Certification

Case Study: Hearst Company has First Gold LEED Certified Office Building in NYC

The Hearst tower (shown on the previous page) was the first office building in New York City to be Gold LEED (Leadership in Energy and Environmental Design) Certified by the U.S. Green Building Council. The building was designed to use less steel than a traditional building and has an efficient heating ventilation and air conditioning (HVAC) system. Many recycled materials were also used in the construction of the tower. The building is equipped with daylight sensors, that sense natural lighting conditions inside the building and adjusts additional lighting appropriately. Windows are designed to allow light to pass through, but a “Low-E” coating prevents some of the heat from radiating through. The inside of the building makes use of a wide range of energy efficient appliances. In total the Hearst Tower uses 22% less energy than a traditional office building of comparable size.

emissions that cannot be avoided. Since emissions associated with paper use account for the vast majority of a book or newspaper’s impact on climate change, publishers, printers and mills that are concerned about their contribution to climate change should first look at ways to increase the portion of their paper that comes from recycled (majority postconsumer), or FSC certified fiber.

As in all industries, climate change presents new and unprecedented challenges to the publishing industry. Fortunately with the environmentally responsible papers, office equipment, and energy sources that are available today, those in the publishing industry are better equipped to deal with this challenge than ever before. As Al Gore has stated, “The good news is we know what to do. The good news is, we have everything we need now to respond to the challenge of global warming. We have all the technologies we need, more are being developed, and as they become available and become more affordable when produced in scale, they will make it easier to respond. But we should not wait, we cannot wait, we must not wait.”

Additional Resources

EPA Climate Leaders
www.epa.gov/stateply

Greenhouse Gas Protocol
www.ghgprotocol.org

Green-e
www.green-e.org

Green Press Initiative
www.greenpressinitiative.org

Native Energy
www.nativeenergy.com

U.S. Green Building Council
www.usgbc.org

References Cited

1. Green Press Initiative, Book Industry Study Group. “Book Industry Climate Impacts and Environmental Trends Report. 2008.
2. Goldman Sachs, “Introducing GSSUSTAIN,” 2007. http://www.unglobalcompact.org/docs/summit2007/gss_esg_embargoed_until030707pdf.pdf
3. Romm, J. and W. Browning. “Greening the Building and Bottom Line, Increasing Productivity through Energy-Efficient Design” Rocky Mountain Institute. 1998 http://www.rmi.org/images/PDFs/BuildingsLand/D94-27_GBBL.pdf
4. Kats, Gregory. “Green Building Costs and Financial Benefits A Report to California’s Sustainable building Task Force.” October, 2003. http://eetd.lbl.gov/emills/PUBS/PDF/Green_Buildings.pdf
5. O’Silivian, Kate. “Virtue Rewarded” CFO Magazine. October, 2006. http://www.cfo.com/article.cfm/7960857/1/c_7988452?f=search
6. Green Press Initiative, Book Industry Study Group. 2008
7. Green Press Initiative, Book Industry Study Group. 2008.
8. Green Press Initiative, Book Industry Study Group. 2008.
9. Green Press Initiative, Book Industry Study Group. 2008.
10. Green Press Initiative, Book Industry Study Group. 2008.
11. Environmental Defense Paper Calculator. <http://www.papercalculator.org>
12. C.M. Gough “The Legacy of Forest Harvest and Burning on Ecosystem Carbon Storage in the Northern Midwest States, USA,” presented to the fall meeting of the American Geophysical Union, December 5-9, 2005.
13. Thornley, J. H. M. and M. G. R. Cannell. “Managing forests for wood yield and carbon storage: a theoretical study.” *Tree Physiology* 20, 477 – 484. August 24, 1999.
14. Dean, Christopher, Stephen Roxburgh and Brendan Mackey. “Growth Modelling of Eucalyptus regnans for Carbon Accounting at the Landscape Level.” *Modelling forest Systems*, edited by A. Amaro, D. Reed and P Soares. CAB International 2003.
15. Harmon, Mark E., William K. Ferrell, and Jerry F. Franklin. 15 “Effects on Carbon Storage of Conversion of Old-Growth Forests to Young Forests.” *Science* 9 February 1990: Vol. 247, no. 4943, pp 699 – 702.
16. U.S. Department of Energy. “Energy Solutions for your building”. 2006. <http://www.eere.energy.gov/buildings/info/office/index.html>
17. C.M. Gough. 2005.