

Comparison of Environmental Certification Programs for Tissue and Other Janitorial Paper Products

Leonardo Academy Inc.

White Paper

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Leonardo Academy focuses on using integrated thinking to promote environmental sustainability. We develop innovative, outcome-focused products and resources that facilitate sustainability by integrating economics, policy, and ecology. We produce rating systems, certification programs, educational resources and other tools that make practicing sustainability practical. Leonardo Academy is a charitable (501c3) nonprofit organization.

Leonardo Academy's Cleaner and Greenersm Program develops and delivers tools that promote, facilitate and measure environmental sustainability. The program specializes in developing action plans, resources and evaluation systems that enable organizations, institutions and individuals to reduce their impacts on the natural environment.

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Foreword

Demand for Green

The purchase of green products has increased due to customer demand, an increase in green building and facility management, and general environmental concerns. Manufacturers are pushing to develop and market more products to meet this demand. The rising popularity of green building certification programs, such as LEED for Existing Buildings, California's Collaborative for High Performance Schools and the Green Guide for Health Care, is a key driver for green purchasing by organizations. These programs have played an important role in the growth of the market for building maintenance and janitorial products with reduced environmental impacts. An increasing number of corporations, government entities, and other buyers are choosing green products for their buildings in an effort to reduce their overall impact on the environment.

Demand for Green Tissue Paper Products

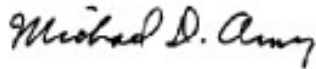
Tissue paper products can have high environmental impacts when produced without attention to sustainability. However, a growing number of manufacturers produce janitorial paper products that place less stress on the environment. Purchasing green tissue products that meet sustainability certification requirements may become standard practice for many corporate and institutional buyers.

Demand for Product Environmental Certification Programs

Third party environmental certification programs make environmental performance claims credible. The ability to easily communicate the environmental benefits of one product relative to another provides an effective marketing tool and serves as a signal to buyers that they are making more responsible choices. Certification programs assist manufacturers and suppliers in selling green products while aiding consumers in identifying these products.

Which Environmental Certification Program Should Be Used for Tissue Products?

This white paper presents the similarities and differences between four major certification programs for tissue products: the Chlorine Free Product Association's Chlorine Free label, the Environmental Choice Program's EcoLabel^M, Green Seal standards, and the U.S. Environmental Protection Agency's Comprehensive Procurement Guidelines. These comparisons can aid both buyers and sellers in deciding which certification programs work best to achieve their objectives.



Michael Arny
President
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Section 1: Introduction

Green product and service certifications are becoming increasingly popular in the commercial building market, particularly for cleaning, janitorial and food service supplies. These certification programs assist both buyers and sellers with identifying or marketing green products. Green product certification programs assist sellers by providing a label that communicates the environmental benefits of their products to potential customers. Buyers benefit from the ease of identifying products with reduced environmental impacts relative to similar products.

1.1 - Green Building Rating and Certification Programs

The sustainable or green building movement has shown explosive growth over the last five years. This growth is expected to continue until green buildings become the norm for building design, construction and operation. Sustainable products and services including janitorial cleaning supplies and paper products are also becoming mainstream as customers specifically request greener options.

Customer demand and the increase in green building and facility management is pushing tissue manufacturers to develop and market commercial and retail products that have reduced environmental impacts. Public discussion about the traditionally high environmental costs of paper production, combined with a rise in the popularity of green building certification programs such as the U.S. Green Building Council's LEED for Existing Buildings, California's Collaborative for High Performance Schools and the Green Guide for Health Care, has played a role in the market growth of green building maintenance and janitorial products. An increasing number of buyers are choosing green products for their buildings in an effort to reduce their overall environmental impact.

1.2 – Sustainable Product Purchasing and Green Cleaning Programs

Interest in sustainable product purchasing and green cleaning programs is increasing. Governments in the states of Massachusetts, Minnesota, New York, and New Jersey and the cities of Santa Monica, Phoenix, and Seattle and Sarasota County, Florida, have established green product purchasing programs. Local governments in Virginia and California have also mandated the use of green janitorial products in buildings. In 2005, New York became the first state to require that schools use green cleaning products and New Jersey has recently followed suit by requiring all state agencies and authorities to begin using green cleaning products.

In another green initiative, New York City implemented the "NYC Greening Our Cleaning Act" that requires the city to conduct a green cleaning pilot program and use environmentally preferable cleaning products and products composed of recycled materials. Existing green product purchasing programs have also developed and documented purchasing criteria that make it easier for other city and state governments to follow suit.¹

Schools, hospitals, and commercial and corporate organizations that include health, safety and environmental issues as part of their primary missions are another area expected to show continued growth in customer demand for green cleaning products and services.

1.3 - Certification Programs Provide Metrics for Reduced Environmental Impacts

Voluntary green product certification systems have become a common way for companies to tap into the growing market for green products because they present a simple message to consumers that a product has a reduced environmental impact. In the tissue market, environmental certification communicates a tissue manufacturer's commitment to the environment by reducing the impacts of their products and processes. Green product certification programs benefit manufacturers, vendors, buyers and the environment. Manufacturers may use these programs as a guide to adapting more sustainable processes

¹ Green's Growing Reach, The quest for facility sustainability, and its impact on jan/san distribution, Sanitary Maintenance, March 2004, <http://www.cleanlink.com/sm/article.asp?id=1138>

and practices. Certified products also have a marketable advantage and benefit those who are responsible for marketing and selling the products. Consumers benefit from the ability to easily identify environmentally preferable products. Additionally, as these certification programs gain momentum and participants, the benefits for the environment steadily increase.

There are a number of environmental standards and labels awarded for tissue and other janitorial paper products. Each certification label represents a specific set of attributes determined by the certification standard while effectively communicating to the public that the product has a reduced environmental impact compared to uncertified products. However, it can be difficult to compare products that have earned different labels due to the variety of certification programs available. This paper bridges those barriers and discusses the similarities and differences between four established environmental certification programs for janitorial paper products; the Chlorine Free Product Association (CFPA), Environmental Choice^M Program (EPC), Green Seal, and the U.S. Environmental Protection Agency's Comprehensive Procurement Guidelines (CPG).

Section 2: Types of Sustainable Product and Service Certification Programs

Sustainable or green product labels and logos communicate information about the environmental impacts of a product, its production or its use. A variety of different sustainable product and service certification programs and associated rating systems award environmental labels in the tissue paper market. This white paper discusses and compares four major standards used in North America: Chlorine Free Product Association (CFPA), Environmental Choice^M Program (ECP), Green Seal, and the U.S. Environmental Protection Agency's Comprehensive Procurement Guidelines (CPG).

Sustainable product certification programs combine one or a variety of environmental considerations in a package that is easy to identify and communicate. Rating systems differ in their certification criteria, the information they seek to convey and the overall certification process. With a variety of different programs offering environmental certification for tissue products, understanding the nuances between them and their differing benefits can be a daunting task.

Three levels of product certification program breadth

Level 1 – Single-Attribute Certification Programs

These certification programs address one environmental attribute of a product. As a result, they are relatively simple but fail to provide an accurate assessment of the overall environmental impacts of a product. A good example is the CPG program, which only addresses recycled content for tissue paper products.

Level 2 – Multi-Attribute Certification Programs

These certification programs address multiple environmental attributes of a product. They provide a more comprehensive assessment of the overall environmental impacts of a product, while remaining reasonably simple to implement. Although they are more comprehensive than single-attribute programs, they still do not provide a complete assessment of the complexity of the environmental impacts of a product over its entire life cycle. ECP, Green Seal and CFPA are examples of multi-attribute programs.

Level 3 – Life Cycle Assessment (LCA) Certification Programs

These certification programs address the complexity of multiple environmental attributes of a product over its entire life cycle. As a result, they provide a comprehensive assessment of the overall environmental impacts of a product, but are exceedingly complicated to implement. LCA is most effective for identifying the full range of environmental impacts of a particular product in order to identify opportunities to reduce these impacts. LCA may become more widely used in the future, but it is currently too complicated to be used as a practical tool.

Section 3: Comparison of Sustainable Tissue Product Certification Programs

Over 6 million tons of tissue paper, including toilet and facial tissue, paper napkins and towels, and sanitary products are manufactured annually in the United States.² In 2005, the disposable paper product market represented an \$18.7 billion industry. Facial tissues alone made up \$2 billion of that amount.³

The environmental impacts of the resource inputs, manufacturing processes and manufacturing waste disposal for these products are large and create a significant potential for decreasing the environmental footprint of the industry. Impacts of tissue manufacture include air emissions from production energy use, water consumption and pollution, and land degradation due to forestry practices and waste disposal.

Each of the environmental certification programs described in this paper is working to provide a metric for environmental impact reduction while addressing varying combinations of environmental issues.

3.1 - Resource Use

Resource use impacts address the material inputs for the product, including recycled fiber content, fiber origin, fuel use and other resources. Detrimental land impacts from paper tissue and towel manufacture are primarily related to unsustainable forestry practices and solid waste disposal during production and after product use. Sustainable forest management, use of recovered fiber content, reduction in non-fiber material used, use of less toxic and biodegradable materials, reduced waste going to landfills, and energy use reduction can all significantly reduce the resource use impacts of tissue products.

Minimum Post-Consumer Content (PCC)

According to the U.S. EPA definition, post-consumer content includes: paper, paperboard, and fibrous wastes after they have passed through their end-usage as a consumer item. This includes used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; used cordage and all paper, paperboard and fibrous wastes that enter and are collected from municipal solid waste. Post-consumer fiber does *not* include fiber derived from printers' over-runs, converters' scrap, and over-issue publications.⁴

Post-consumer content is considered directly or indirectly in each of the rating systems discussed in this paper. CFPA, Green Seal and CPG each have specific minimum requirements (*Table 3.2*) for PCC based on the percentage in the final product. ECP considers PCC in the certification process; however there is no minimum required content. Instead, ECP factors the amount of a variety of resources inputs – post-consumer content, pre-consumer materials, planer shavings – into an equation that calculates the environmental impact of the resource inputs as tons materials per resources used. Resources are weighted by factors to ensure that post-consumer and other recovered materials improve the score (*Appendix B: Table B.2*).

Minimum Recovered/Recycled Content

According to the EPA definition, recovered content includes post-consumer content as well as: dry paper and paperboard waste generated after completion of the papermaking process (the manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets); envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; butt rolls, mill wrappers, and rejected unused stock; and repulped finished paper and paperboard

² Report of the Forty-Second Session of the FAO Advisory Committee on Paper and Wood Products. April 2001 <http://www.fao.org/documents/show_cdr.asp?url_file=//docrep/003/y1720e/Y1720E00.HTM>.

³ *The 2000-2005 World Outlook for Disposable Paper Products*. San Diego, CA: Icon Group, Ltd. 2002.

⁴ "Post-Consumer Fiber." *EPA Comprehensive Procurement Guidelines: Definitions, Specifications and Other Guidance*. 27 Mar 2006 <<http://www.epa.gov/cpg/products/define.htm>>.

from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.⁵

Requiring a minimum percentage of recycled fiber for certification is a simple way sustainable tissue paper certification programs can reduce the environmental impact on virgin fiber sources (i.e., forests), while keeping a metric that is relatively simple to measure. This requirement has an indirect correlation with a similar possible certification program requisite of limits on virgin fiber content. For example, a rating system requirement that specifies 100 percent recycled content in certified products is equivalent to one that specifies that no virgin fiber may be used.

Recovered content is considered in each of the rating systems. Green Seal has the most stringent requirement, requiring 100 percent recovered fiber in all certified products. CFPA and CPG each have minimum recovered content requirements, but do not require any recovered content exceeding the PCC requirement. ECP does not have a required minimum percent recovered content, but factors the amount of recovered material in the product into a resource use equation that considers a variety of types of recovered materials (*Appendix B: Table B.2*).

Sustainable Forestry

A multitude of problems arise from poor forestry practices, including destruction of forest resources, land degradation and social impacts. Sustainable forestry reduces these impacts by limiting clear cutting and the harvest of old growth timber while monitoring forestry practices and a company's broader impact on the surrounding community and environment.

Some environmental certification programs require that all trees used for virgin pulp are grown and harvested sustainably. This may require forest certification under one of a number of sustainable forestry certification programs, or it may specify specific requirements such as no use of old growth timber.

Examples of sustainable forestry certification programs are the Forest Stewardship Council (FSC), the SmartWood label and the Sustainable Forestry Initiative. CFPA and the ECP standards require that forests providing virgin fibers be managed in a sustainable fashion. Green Seal does not include this requirement because all Green Seal products are required to contain 100 percent recovered fiber and therefore cannot contain virgin pulp materials. CPG does not address forestry practices.

Reduced Non-Fiber Resources

This requirement promotes reduction in use of non-fiber resources or limits what materials may be used. Non-fiber inputs include fillers, wet strength agents and other non-fibrous materials that are present in the final product. Resource use for fillers can be measured per unit of product produced. Depending on the product, a wide variety of materials can be used as fillers and it is challenging for a certification program to differentiate between the environmental impacts of each, perhaps the reason so few programs consider non-fiber resources.

ECP is the only certification program discussed in this paper that considers non-fibrous resource inputs. In the "Resource Consumption" category of ECP, non-fibrous inputs are considered just as fibrous materials, taking different values based on whether the materials are pre-consumer or post-consumer (see *Appendix B: Table B.2* for a list of resource input weighted factors).

Restrictions on Pigments, Dyes and Inks and Fragrances

Certification programs can prohibit the presence of any added pigments, inks, dyes or fragrances. CFPA and Green Seal standards require that these substances are not added to the product. ECP and CPG do not limit the use of pigments, dyes, inks and fragrances.

⁵ "Recovered Fiber." *EPA Comprehensive Procurement Guidelines: Definitions, Specifications and Other Guidance*. 27 Mar 2006 <<http://www.epa.gov/cpg/products/define.htm>>.

Packaging Requirements

Some certification programs specify packaging requirements or prohibit the presence of certain toxic and harmful chemicals or additives in product packaging. For example, a program can require that all packaging materials are made entirely of recycled materials to reduce the impact on virgin resources. Additional requirements may include a minimum square feet of product per tissue roll or box.

CFPA and Green Seal standards address packaging requirements. Both CFPA and Green Seal prohibit measurable amounts of lead, cadmium, mercury, or hexavalent chromium in the product packaging. Green Seal further requires that certified facial tissue contain at least 70 square feet of product per box, toilet tissue contain at least 40 square feet per roll, and that cored products (i.e., toilet tissue and paper towels) contain a core made of 100 percent recovered fiber. CFPA requires that bathroom tissue be packaged with at least 4 rolls and all wrapping materials contain 100 percent recycled content. The ECP and CPG certification programs do not address packaging.

3.2 - Water Quality

Impacts on water quality resulting from paper manufacture include high water consumption rates and effluent discharges of wastewater. Both consumption rates and emissions can be minimized to reduce these water impacts. The manufacturing process uses large quantities of water, especially during the pulp production and bleaching processes. Water reduction and reuse strategies are frequently employed by paper mills, especially those located in arid environments where potable water is costly. For example, SCA Tissue's mill in Flagstaff, AZ, has streamlined manufacturing processes to reduce water use while utilizing reclaimed water to provide necessary inputs.⁶

Surface and groundwater contamination from wastewater disposal may also result from the tissue paper manufacturing process. Chemicals used during the pulping and bleaching process may contain chlorine and other toxic chemicals that pollute the water supply. Three different bleaching processes are commonly used: elemental chlorine bleaching, chlorine compound bleaching, and chlorine-free bleaching. Elemental chlorine bleaching contaminates wastewater with high levels of toxic chemicals such as dioxins and other dissolved chlorinated byproducts. Bleaching with chlorine-containing compounds (most commonly chlorine dioxide) instead of pure chlorine reduces but does not eliminate harmful dioxins, furans and PCBs in the product and effluent waste. A total chlorine-free bleaching process eliminates the use of any chlorine or chlorine containing compounds in the bleaching process, commonly utilizing hydrogen peroxide as the bleaching agent.

Elemental Chlorine Free

Certification programs can require that elemental chlorine is not used during the bleaching process. CFPA and Green Seal standards specifically prohibit the use of elemental chlorine during the bleaching process. ECP uses a different method of addressing this issue. Instead of prohibiting the chemical in the process, ECP limits the levels of furans and dioxins (specifically 2,3,7,8-TCDD and 2,3,7,8-TCDF) in the resulting effluent. This method of regulation essentially bans the use of pure chlorine during the bleaching process. CPG does not address chlorine use.

Processed Chlorine Free

Certification programs can require that no compounds containing chlorine are used in the bleaching process. CFPA and Green Seal standards require all bleaching agents to be free of chlorine and chlorine containing compounds. ECP and CPG do not address the use of chlorine compounds.

Effluent Content Restrictions

Certification programs can require the testing of wastewater for toxicity and for biological oxygen demand (BOD), which decreases the amount of available oxygen for aquatic life. In addition, programs may specify limits in order to reduce the negative environmental impacts of effluent. ECP requires that certified

⁶ Informational Flier. "SCA Takes Environmental Stewardship to a New Level at the Flagstaff Arizona Mill." SCA Tissue. Neenah, WI: 2003.

product manufacturers measure and limit furans and dioxins in effluent waste. CFPA, Green Seal and CPG do not address effluent waste.

Water Use Reduction

Certification programs can limit the amount of water used per unit of paper produced. EPC, CFPA, Green Seal and CPG do not address water consumption rates.

3.3 - Waste

Waste results from the harvesting of material inputs, manufacture, use and disposal of the final product. Minimizing the amount or increasing the biodegradability of solid waste generated reduces stress on the waste disposal infrastructure. Since the recyclability of used tissue products is virtually zero due to the nature of their use, it is essential to consider other ways to minimize waste, such as increasing the quality of the product so less is needed or including recovered fiber content in the product. Recycling materials from the waste stream, increasing waste biodegradability, and minimizing waste toxicity decreases the land impacts of janitorial paper products and their manufacture.

Waste Reduction

Certification programs can limit the amount of waste created during production. The ECP standard requires monitoring and reducing (if necessary) the amount of waste generated during production. ECP measures the net solid waste created per ton of paper produced, taking into account waste that is diverted from the waste stream due to recycling or other activities. CFPA, Green Seal and CPG do not address solid waste.

3.4 - Air Quality and Energy Use

Pulp and paper manufacture requires large amounts of energy. This energy use creates harmful air emissions as pollutants are released by the burning of fossil fuels. These emissions can be reduced in a number of ways. Minimizing energy use for transportation of resources and finished products, adjusting manufacturing processes to reduce energy requirements and using renewable energy can each significantly decrease the energy and air quality impacts of tissue and towel production.

Air Emissions Regulations Compliance

Certification programs can require verification of compliance with all applicable government regulations concerning air emissions or require reductions in air emissions beyond compliance with government regulations. Only the EPC standard addresses air emissions regulations compliance. CFPA, Green Seal and CPG do not address air quality issues.

Energy Consumption per Unit of Production

Certification programs can specify limits on the amount of energy used per unit of production of tissue products. This requirement may be used to limit the amount of energy used for paper production on a per ton basis, including all production activities on and offsite. ECP is the only environmental labeling program discussed in this paper that takes into account production energy use. Energy consumption is measured in gigajoules per ton (Gj/ton), or the electricity used to produce one ton of paper, and points are given and factored into the ECP's equation (*Appendix B: Table 1*). Energy consumption measured includes energy used in the production of wood chips and major process chemicals, mill energy use and off-site treatment facilities.

Indirect Emission Reductions

Certification programs can require reductions in air emission reductions beyond what is achieved with direct emission reductions. Examples include purchasing renewable energy certificates (RECs) and emission reduction credits or renewable energy use. EPC, CFPA, Green Seal and CPG do not address indirect emission reductions.

Comparison of Sustainable Tissue Product Certification Programs By Environmental Factor

Tables 3.1 and 3.2 (below) summarize how select tissue certification programs - U.S. EPA's Comprehensive Procurement Guidelines, Chlorine Free, Green Seal and Environmental Choice - address the environmental impact categories discussed above.

Table 3.1: Environmental Factors Considered by Program

Environmental Factor	U.S. EPA's CPG	Chlorine Free Products	Green Seal	Environmental Choice
Resource Use for Production				
<i>Recycled Content Addressed</i>	X	X	X	X
<i>Minimum Post-Consumer Content</i>	X	PCF only	X	
<i>Certified Sustainable Forestry</i>		X		X
<i>Non-Fibrous Resource Use</i>				X
<i>Energy Use for Production</i>				X
Water Quality				
<i>Elemental Chlorine Free</i>		X	X	X
<i>Free of Chlorine Compounds</i>		X	X	
<i>Effluent Content Restrictions</i>				X
Waste Reduction				
<i>Solid Waste</i>				X
Air Quality				
<i>Regulatory Emissions Compliance</i>				X
Other Product Requirements				
<i>Packaging Requirements</i>		X	X	
<i>No Pigments, Dyes or Fragrances</i>		X	X	

Table 3.2. Environmental Factor Details by Program

Environmental Factor	U.S. EPA's CPG	Chlorine Free Products	Green Seal	Environmental Choice
Resource Use				
Post Consumer Recycled Content	10% Facial tissue 20% Toilet tissue 30% Paper napkins 40% Paper towels	40% Required for PCF	40% Required	* Considered in calculations, but no required minimum
Recovered Content (Post-Consumer and Other Recovered Materials)	10% Facial tissue 20% Toilet tissue 30% Paper napkins 40% Paper towels	40% Required for PCF	100% Required	* Considered in calculations, but no required minimum
Sustainable Forestry	Not addressed	No pulp from old growth or unsustainably managed forests. (see CFP description for full requirements)	Not addressed because no virgin fiber is used in certified products	Requires "Corporate Code of Sustainable Forest Practices" (see ECP description for definition)
Water Quality				
Elemental Chlorine Free	Not addressed	Required	Required	Essentially required due to effluent content restrictions
Processed Chlorine Free	Not addressed	Required	Required	Partially addressed through effluent content restrictions
Effluent Content Restrictions	Not addressed	Not addressed	Not addressed	Limits furans and dioxins in effluent
Waste Reduction				
Solid Waste Reduction	Not addressed	Not addressed	Not addressed	Measured in waste per ton produced. See Appendix A
Air Quality				
Production Energy Use	Not addressed	Not addressed	Not addressed	Measured in GJ/ton. See Appendix A
Other Product Requirements				
Packaging Requirements	Not Addressed	Prohibits certain metals in packaging. Min. 4 rolls toilet tissue. 100% recycled content wrapping materials	Prohibits certain metals in packaging. Min. 70 ft ² facial tissue per box. Min. 40 ft ² toilet tissue per roll.	Not Addressed
Restrictions on Pigments, Dyes, Inks & Fragrances	Not addressed	Requires none added	Requires none added	Not addressed

Section 4: Conclusions

Customer demand and an increase in green building and facility management are pushing tissue manufacturers to develop and market products that reduce environmental impacts. Information disclosure about the high environmental costs of paper production, combined with a rise in the popularity of green building certification programs such as LEED for Existing Buildings, California's Collaborative for High Performance Schools and the Green Guide for Health Care, has played a role in the market growth for sustainable building maintenance and janitorial products. An increasing number of corporations, government entities and other buyers are choosing green products for their buildings in an effort to reduce their overall environmental impact.

Voluntary certification systems for environmentally preferable products have become a common way for companies to tap into this growing market for green products because they present a simple message to consumers. In the tissue market, environmental certification communicates the manufacturer's commitment to the environment and to reducing the impacts of its products and processes. Certification programs for products with reduced environmental impacts benefit buyers, manufacturers, sellers and the environment.

Consumers benefit from the ability to easily identify environmentally preferable products, and manufacturers can use these programs as a guide for adapting more sustainable processes and practices to meet the needs of an ever growing population of environmentally minded consumers.

A Forecast of the Future Evolution of Tissue Product Certification Programs:

In the short term, both single-attribute certification programs and multi-attribute certification programs will play the primary role in environmental performance communications between buyers and sellers of tissue products.

As time progresses, single-attribute certification programs will start to fade from the picture or will adapt into multi-attribute certification programs because of their limited ability to address the complexity of the overall environmental impacts of products. The role of multi-attribute certification programs will grow in importance. There will also be a growing use of Life Cycle Assessment (LCA) for analyzing the environmental impacts of particular products and identifying opportunities for reducing those impacts.

In the long term, successful multi-attribute certification programs will increase their comprehensiveness and grow in the direction of Life Cycle Assessment. LCA techniques and tools will also start to play an increasingly important role in the comparison of the environmental impacts of products.

In addition, LCA techniques and tools will allow better comparisons between the different green product certification programs. Currently, it is difficult to assign weighting factors between the environmental factor categories within the certification programs. Are post consumer recycled content requirements more environmentally important than chlorine free production processes or energy use reduction from closer product distribution points? Are very strict requirements in one or two environmental factor categories more environmentally effective than more moderate standards across a broad spectrum of environmental factor categories?

In the short run, these comparison questions are difficult to resolve. LCA will eventually allow better environmental impact comparisons. As a consumer, select the green product certification program that matches up best with your desired environmental attributes and minimum requirement levels.

Section 5: Resources

Chlorine Free Products Association

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Washington, DC 20460
www.epa.gov/osw

Appendix A: Description of Sustainable Tissue Product Certification Programs

Appendix A.1 - Chlorine Free

Owner and Administrator

The Chlorine Free Products Association (CFPA) is the owner and administrator of the Chlorine Free certification program. CFPA is a nonprofit trade organization and standards association composed of companies supporting products free of chlorine and advanced technologies for reduced environmental impact. Members work to establish and change government policies and resource allocation, and to support research, development and consumer purchasing preferences.

Transparency of Development Process

CFPA standards are written and developed by the Sustainable Manufacturing & Marketing Initiative (SMMI) Advisory Council, then released for a public comment period before being published. The independent SMMI Advisory Council was formed by CFPA in October 2002 to improve the consistency and effectiveness of its auditing procedures.

Range of Certifications

CFPA developed and operates standards for a variety of paper products, including office paper, newsprint, coated paper, and tissue, towel and napkin products.

Certification Audits

Certification audits are conducted by examining organizations approved by CFPA. The Totally Chlorine Free (TCF) and Processed Chlorine Free (PCF) certification approval process requires an initial mill audit to confirm compliance with CFPA requirements, documentation from regional pollution control authorities (i.e., U.S. EPA, State EPA or regional authorities), and a signed agreement and certification review fee. Reviews are performed by TAPPI (Technical Association for the Pulp and Paper Industry) Fellows, Scientific Certification Services, or other approved and qualified auditors.

The mill audit begins with a chain of custody analysis for all fibers purchased by the facility and requires research of facilities permits, a tour of the mill, meetings with key production managers, and confirmation of all documentation supporting certification approval. The SMMI Advisory Council awards final approval for certification.⁷

CFPA awards one of two labels when a tissue or napkin product completes the certification process: PCF or TCF. The TCF label identifies virgin pulp tissue products that do not use any chlorine or compounds containing chlorine during the papermaking process, in addition to sustainable forestry practices and a limit on the use of toxic pigments in the product and packaging. The PCF label is very similar to the TCF, but is reserved for paper products with recycled content and further requires the product to contain at least 40 percent post consumer content.

Environmental Factors Considered:⁸

1. For PCF certified products, there is a minimum requirement of 40 percent post-consumer content.
2. CFPA requires that all pulp used in paper production of PCF and TCF certified products are not bleached with chlorine, chlorine containing compounds, or any chemicals listed under Section 313 of the Emergency Planning and Community Right to Know Act of the U.S. EPA.
3. CFPA requires that no virgin pulp from old growth forests is used in production and that all forests providing wood for said pulp be "sustainably managed" as proved by chain of custody documentation. Documentation of this requirement would include certification by the Forest Stewardship Council, Pan

⁷ Archie Beaton. Chlorine Free Products Association, Personal Email. 8 Mar 2006.

⁸ *CFPA #103: TCF/PCF Mark Certification Standards for Paper Tissue, Towel and Napkin*, First Edition. Chlorine Free Products Association. June 1997. Revised June 2000.

European Forest Certification, Scientific Certification Systems, Certified Forest Products, SmartWood, or another program that fills the SMMI criteria for third party certification of sustainable forests. For a complete list of these requirements, consult CFPA #103.⁸

4. Water quality and air quality permit verification is necessary for certification, but no additional requirements above government regulations are considered in this standard.
5. Product performance must meet TAPPI standards and the product must not contain any added pigments, dyes or fragrances.
6. CFPA packaging requirements ensure that certified product wrappers contain 100 percent recycled materials and do not contain any additives for which lead, cadmium, mercury or hexavalent chromium has been "intentionally introduced."

Frequency of Required Recertification

Chlorine Free certification must be renewed every five years.

Appendix A.2 - Environmental Choice Program

Owner and Administrator

The Environmental Choice Program (ECP) or EcoLogo[®], is owned by Environment Canada, the national environmental protection agency of the Canadian Government. Environment Canada developed the program in 1988 to provide a market incentive for environmentally preferable products and selected Terra Choice, an environmental marketing and consulting firm, to administer ECP. While Terra Choice is itself a for profit entity, ECP remains a nonprofit government program.

Transparency of Development Process

ECP standards are developed in cooperation with interested stakeholders representing industry, environmental groups, consumer groups, academia and the government. After initial standard development, a four to eight week public review period solicits comments from interested parties. Comments made during this time are considered prior to finalization of the standard. ECP is a member of the Global Ecolabeling Network and standard development and certification processes reflect the requirements of that organization.

Range of Certifications

Over 250 companies currently have products and services certified by Environmental Choice in over 300 categories, encompassing a wide variety of products including agricultural and horticultural products, automotive products, appliances, consumer products, flooring, janitorial products including paper products, home improvement, office furniture and supplies, recreational products, and others.

Certification Audits

All certification audits are conducted by Terra Choice. The ECP certification process requires a review of product and process information and documentation, an examination of the company's quality control measures, and a facility audit for initial certification

Environmental Factors Considered:^{9, 10, 11, 12}

1. Products and the manufacturing and transportation process must meet all governmental and industry safety and performance standards, including disposal of waste products.
2. Effluent from any mill that manufactures pulp or paper for the product seeking certification must not contain measurable concentrations of 2,3,7,8-TCCD or 2,3,7,8-TCDF. This requirement essentially prohibits the use of elemental chlorine in the bleaching process.
3. For any virgin pulp, wood fiber must be harvested from forests managed under a "corporate code of sustainable forest practices." ECP defines this as a statement of practices which has the objective of

⁹ *Certification Criteria Document CCD-082: Toilet Tissue.* Environmental Choice Program. August 1995.

¹⁰ *Certification Criteria Document CCD-084: Table Napkins.* Environmental Choice Program. August 1995.

¹¹ *Certification Criteria Document CCD-085: Kitchen Towels.* Environmental Choice Program. August 1995.

¹² *Certification Criteria Document CCD-086: Hand Towels.* Environmental Choice Program. August 1995.

maintaining environmental, economic, and social values of the forest. The code must specify, at a minimum, harvesting practices, forest regeneration, biodiversity and wildlife protection, soil conservation, watershed protection, and the participation of communities in forest planning.¹³ Examples include third party certification of sustainable forestry practices, such as using FSC Certified or SmartWood.

4. ECP uses a points-based system to allow for some flexibility in sustainable practices while keeping requirements stringent. Higher point values are achieved by poorer environmental performance. For a product to qualify, point values for all parameters (resources consumption, energy consumption, chemical oxygen demand, sub lethal toxicity and net solid waste) must sum to 4 points or less. *Appendix B: Table B.1* provides the points given for environmental variables.

- a. Resource Consumption: Calculated as tons of resource consumed per ton of paper produced. This includes all fibrous materials and non-fibrous additives present in the final product. It does not include fuel used or bleaching and process chemicals. Fiber resources are multiplied by a factor to account for the positive environmental impact of using post consumer material or other recovered content instead of new fibers (*Appendix B: Table B.2*).
- b. Energy Consumption: The energy used to produce one ton of paper in gigajoules per ton (Gj/ton). This includes energy used in the production of wood chips, major process chemicals, mill energy use, and off-site treatment facilities.
- c. Chemical Oxygen Demand: Organic chemical loading of aqueous effluent measures biochemical oxygen demand and organic suspended solids.
- d. Sub lethal toxicity: Measured in toxicity emission factor (TEF_{sub}). This only applies to mills that discharge directly into natural water sources.
- e. Net Solid Waste: Total weight of solid waste created during production of component pulp and paper. Weights of a variety of products are weighted to account for waste diverted from the waste stream through recovery and recycling activities (*Appendix B: Table B.3*).

Frequency of Required Recertification

ECP certifications must be reviewed annually to maintain certification. Licensees are required to sign and send in a Declaration of Compliance as well as a Sales Attestation.

Appendix A.3 – Green Seal

Owner and Administrator

The Green Seal Certification program is owned and administered by Green Seal Inc., a nonprofit organization founded in 1989. Green Seal began certifying products in 1992, with the first standards being household cleaners, paints and appliances.

Green Seal works with major institutional purchasers, federal agencies, industry sectors, and government programs to promote sustainable purchasing. Part of this effort involves the development of Green Seal's *Choose Green Reports*, which recommend specific products and brands, independent of whether or not they seek Green Seal certification.

Transparency of Development Process

Green Seal certification standards meet the criteria of ISO 14020 and 14024, the U.S. EPA's criteria for third party certifiers of environmentally preferable products, and the recommendations of the Global Ecolabeling Network, of which it is a member. A committee of stakeholders, including manufacturers, trade organizations, product users, government agencies, academia, and environmental and public interest groups, guides the standard setting process. Green Seal recommends a standard to the Stakeholder Committee based on the findings of a life-cycle evaluation of the product category's environmental impacts. The Committee reviews and comments on the preliminary standard before it is released for public comment. Public comments are considered before the standard is presented for vote by the Stakeholder Committee to achieve consensus.

¹³ *Certification Criteria Document CCD-082: Toilet Tissue*. Environmental Choice Program. August 1995.

Range of Certifications

To date, over 300 products have been certified in a broad range of categories, including vehicles, paints and coatings, janitorial products, lamps, windows, and paper products.

Certification Audits

Certification audits are conducted by Green Seal only. The certification process typically takes about three months and includes product evaluation and testing and an audit of manufacturing facilities.

Environmental Factors Considered:^{14, 15}

1. Green Seal requires certified products to be made of 100% recovered material, including a specified level of post-consumer content. Paper towels and napkins must contain a weighted average of at least 40% post-consumer content, 20% for bathroom tissue, and 10% for facial tissues.
2. Recovered materials cannot be de-inked using any solvents containing chlorine, benzene, cadmium and cadmium compounds, carbon tetrachloride, chloroform, chromium and chromium compounds, cyanide compounds, dichloromethane, lead and nickel compounds, mercury and mercury compounds, methyl ethyl ketone, nickel and nickel compounds, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene or zylene. Pulp cannot be bleached with chlorine or chlorine containing compounds.
3. Paper towels and napkins cannot contain any added pigments, inks, dyes or fragrances, and all certified tissue products must perform in accordance with "reasonable industry practice."
4. Packaging cannot contain measurable levels of the toxic metals lead, cadmium, mercury or hexavalent chromium and rolled tissue product cores must contain 100 percent recovered materials. Tissue paper must contain a specified amount of product per roll or box.

Frequency of Required Recertification

Green Seal certified products are monitored annually to ensure the product continues to meet the standards.

Appendix A.4 - U.S. EPA's Comprehensive Procurement Guidelines

Owner and Administrator

The United States Environmental Protection Agency (U.S. EPA) is the government agency responsible for protecting human and environmental health. Established in 1970, the U.S. EPA develops and enforces environmental regulations, performs environmental research, educates the public on environmental matters, and provides grants and sponsorships for a variety of public and private environmental programs.

The U.S. EPA Comprehensive Procurement Guidelines (CPG) are part of the agency's Buy Recycled Program, a program developed to reduce solid waste. The first CPG was released in 1995, and included 24 products. The CPG has since grown to include over 60 product types in a variety of categories, including construction, landscaping, office products, paper, park and recreation items, vehicular products and other miscellaneous goods.

Transparency of Development Process

The U.S. EPA develops these standards using its rulemaking procedures. The U.S. EPA also issues guidance on buying recycled-content products in Recovered Materials Advisory Notices (RMANs). The RMANs recommend recycled-content ranges for CPG products based on current information on commercially available recycled-content products.

The process by which a product is considered and receives CPG/RMAN recommendation involves: (1) the suggestion of a CPG by the public or researched from publicly available information, (2) the category

¹⁴ *Green Seal Standard GS-01: Tissue Paper*, Second Edition. Green Seal. Feb 1992.

¹⁵ *Green Seal Standard GS-09: Paper Towels and Paper Napkins*, First Edition. Green Seal. Jan 1993.

is evaluated against designation criteria, (3) additional product research is performed, (4) the CPG workgroup reviews the guideline, (5) a CPG and RMAN proposal is posted in the *Federal Register*, (6) there is a public comment period, (7) additional research is performed, (8) the EPA publishes a final rule, and (9) the CPG is codified in 40 CFR 247.

Range of Certifications

Approximately 1,350 suppliers are listed in the CPG/RMAN database as providing products that meet CPG requirements. There is no cost associated with being considered for the database.

Certification Audits

Products can be self-certified, but the EPA makes a reasonable effort to verify product compliance before listing it in the CPG database.

Environmental Factors Considered:¹⁶

CPG consider only post-consumer and total recovered content in designated products. CPG specify a required level of post-consumer and/or recycled content, and products must meet these requirements. For tissue and towel products, the EPA requires between 10 and 40 percent post-consumer material: Facial Tissue 10%, Toilet Tissue 20%, Paper Napkins 30%, and Paper Towels 40% minimum. Total recovered material is suggested to be up to 100 percent for each of these.

Frequency of Required Recertification

CPG is not a traditional certification program because manufacturers can self-certify products at any time.

¹⁶ United States Environmental Protection Agency. Office of Solid Waste and Emergency Response. *Comprehensive Procurement Guidelines, Buy Recycled Series: Paper Products*. Washington: GPO, 2004.

APPENDIX B: ECP Points-Based System Variables

Table B.1: ECP Load Points By Measurement Parameter¹⁷

PARAMETER	LOAD POINTS*				
	0	1	2	4	8
Resource consumption (tonne/tonne)	< .05	.05 to .2	.2 to .8	.8 to 1.1	> 1.1
Energy consumption (GJ/tonne)	< 24	24 to 27	27 to 40	40 to 52	> 52
COD (kg/tonne)	< 5	5 to 15	15 to 40	40 to 60	> 60
TEFsub	< 50	50 to 100	100 to 150	150 to 200	> 200
Net solid waste (tonne/tonne)	<-1.3	-1.3 to -.6	-.6 to -.2	-.2 to .1	> .1

*A product must not exceed 4 points from the table above in order to earn the ECP label.

Table B.2: ECP Fibrous Resources Weighted Factors¹⁹

Fiber Resource Input	Weighted Factor
Post-Consumer Material	0.00
Printed Recovered Material	0.00
Sawdust, Planer Shavings	0.33
Pre-Consumer Material	0.75
Whole Logs	1.00
Wood Chips	1.00

Table B.3: ECP Net Solid Waste Weighted Factors¹⁹

Solid Waste Materials	Weighted Factor
Post-Consumer Materials	1.00
Printed Recovered Materials	1.00
Sawdust, Planer Shavings	0.67
Pre-Consumer Material	0.25
Whole Logs	0.00
Wood Chips	0.00

¹⁷ Certification Criteria Document CCD-082: Toilet Tissue. Environmental Choice Program. August 1995.