

**Supporting Green Markets**  
**Environmental Labeling, Certification and**  
**Procurement Schemes in Canada, Mexico and**  
**the United States**

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|--------|--|
| APEO   | alkylphenol ethoxylates  |
| BEPAC  | Building Environmental Performance Assessment Criteria   |
| BPI    | Biodegradable Plastics Institute   |
| CBIP   | Commercial Buildings Incentive Program   |
| CCME   | Canadian Council of Ministers of the Environment   |
| CEC    | Commission for Environmental Cooperation   |
| CFC    | chlorofluorocarbons  |
| CFPA   | Chlorine-Free Products Association   |
| CI     | Consumers International  |
| CLI    | Consumer Labeling Initiative   |
| CPG    | (US) Comprehensive Procurement Guideline   |
| CPPA   | Canadian Pulp and Paper Association  |
| DGN    | (Mexico) <i>Dirección General de Normas</i> [Department for General Product Norms]                                   |
| DLA    | Defense Logistics Agency   |
| DOD    | (US) Department of Defense   |
| DOE    | (US) Department of Energy  |
| ECP    | (Canada) Environmental Choice Program  |
| EDTA   | ethylene diaminetetraacetic acid   |
| EMS    | environmental management system  |
| EPA    | (US) Environmental Protection Agency   |
| EPCA   | (US) Energy Policy and Conservation Act  |
| EPD    | Environmental profile data sheet   |
| EPP    | environmentally preferable purchasing  |
| EPPNET | Environmentally-Preferable Products Procurement Listserve  |
| ERP    | environmentally responsible procurement  |
| FIDE   | (Mexico) <i>Fideicomiso de Ahorro de Energía Eléctrica</i> (“Sello FIDE”) [Trusteeship for Saving Electrical Energy] |
| FIFRA  | (US) Federal Insecticide, Fungicide, and Rodenticide Act   |
| FSC    | Forest Stewardship Council   |
| GATT   | Global Agreement on Tariffs and Trade  |
| GBIC   | Green Building Information Council   |
| GDP    | Gross Domestic Product   |
| GEN    | Global Eco-labeling Network  |
| GFNCR  | Greening of Facilities National Capital Region   |
| GIPPER | Governments Incorporating Procurement Policies to Eliminate Refuse   |
| GM     | General Motors   |
| GSA    | (US) General Services Administration   |
| HCFC   | hydrochlorofluorocarbons   |
| HVAC   | Heating, Ventilation, Air-Conditioning   |
| HVS    | (US) Hospitality Valuation Services  |
| ISO    | International Organisation for Standardization   |
| LCA    | life-cycle analysis  |
| MGPN   | Manitoba Green Procurement Network   |

|        |  |
|--------|--|
| MSDS   | materials safety data sheets   |
| NACO   | (US) National Association of Counties  |
| NAFTA  | North American Free Trade Agreement  |
| NASPO  | (US) National Association of State Procurement Officials   |
| NDR    | no detected residues   |
| NERC   | (US) Northeast Recycling Council   |
| NRTEE  | National Round Table on the Environment and the Economy  |
| NGO    | nongovernmental organization   |
| NMS    | National Master Specification  |
| NMX    | <i>Normas Mexicanas</i>  |
| NOM    | <i>Normas oficiales Mexicanas</i> [Official Mexican Norms]   |
| NTFP   | non-timber forest products   |
| NWF    | (US) National Wildlife Federation  |
| ODP    | ozone depletion potential  |
| OECD   | Organisation for Economic Co-operation and Development   |
| PPM    | parts per million  |
| PWGSC  | Public Works and Government Services Canada  |
| REDI   | Renewable Energy Deployment Initiative   |
| RPS    | real property services   |
| SCS    | scientific certification systems   |
| Secofi | (Mexico) <i>Secretaría de Comercio y Fomento Industrial</i> [Secretariat of Commerce and Industrial Development]                                     |
| SFM    | sustainable forest management  |
| Sinalp | (Mexico) <i>Sistema Nacional de Acreditamiento de Laboratorios de Prueba</i> [National System for the Accreditation of Authorized Test Laboratories] |
| UN     | United Nations   |
| UNEP   | United Nations Environment Programme   |
| USDA   | United States Department of Agriculture  |
| VOC    | volatile organic compound  |
| WHMIS  | (US) Workplace Hazardous Materials Information Systems   |
| WTO    | World Trade Organization   |

## Executive Summary

Among the highlights of this report:

- There are at least 25 important environmental labeling schemes in place in the United States. These schemes cover 156 product categories and approximately 310 actual products. While diversity of choice—especially in public policy instruments—is welcome, the current state of environmental labels may contribute to a bewildering array of choices for consumers, and the inability of one or two labels to carve a dominant market niche. (Given the trend in US markets toward the predominance of labels within different product categories, this fragmentation may contribute to the somewhat disappointing results of labels in the United States). This diversity of schemes also makes it difficult to determine an overall or aggregated estimate of total expenditures on green labels in the United States at this time.
- In Canada, the principal environmental labeling program is Environmental Choice. Owned by the federal government, it is operated by an independent agency, TerraChoice Inc. Approximately 2,000 products and services have Environmental Choice labels, representing 200 firms. Sales in products and services that have Canada's Environmental Choice logo are projected to total C\$3.26 billion for 1999, according to 1998 estimates. Percentage of total market sales within product categories are unavailable.
- Mexico continues to develop environmental labels. Examples already in operation include labels for recycled paper, energy savings on electrical appliances (FIDE), listed on page 20.
- Demand for environmental products and services appears to have settled into a niche, or specialized market segment. While eco-labeling markets appear to have stabilized or flattened, both environmental certification and environmental purchasing appear to be expanding.
- While this report divides labels, certificates and procurement into simple categories, there are important linkages between them. Labeling and certification often use similar if not identical criteria and indices. Where they differ is that, generally speaking, labels are applied to specific products (and to a lesser extent services), whereas certificates often have a different audience, other large retail firms or purchasers, as opposed to individual consumers. And environmental certification often looks at underlying environmental management systems, as opposed to specific and technical criteria of products from a cradle to grave perspective.
- The shift in many businesses from pollution control to pollution prevention may help explain this growing emphasis on certification and institutional procurement.

Although the issue of climate change has not affected the general public's buying habits yet, the Kyoto Protocol is likely to push energy efficiency and conservation to the forefront in the next five years. It is spawning the creation of a number of government-sponsored programs and initiatives that promote energy conservation, energy efficiency and greener building design. Environmental Choice reports a strong demand for certified green power, and expects that demand to increase as companies increasingly look for means to reduce their total greenhouse gas emissions and purchase credit offsets.





## Introduction

In the past decade, the goal of harnessing the power of markets in support of environmental objectives has passed through several stages, from strong enthusiasm, cautious optimism, disappointment, and a refocusing of efforts toward achievable goals and defined market segments. In this evolution, one fact remains at the center of efforts to expand green markets: opinion polls in both developing and developed countries consistently show that public support for environmental protection is robust and unwavering. The “puzzle” in explaining why green markets have not taken off in light of strong public concern for environmental protection can be explained thus: public “concern” and consumer behavior are far from identical. Often the public expects strong regulatory intervention by governments to safeguard the environment, without drawing any strong links between their individual purchasing decisions and the overall state of their environment.

Among the most important tools to bridge this gap between public concern and consumer behavior are environmental labeling, certification and procurement policies.

This report by the Commission for Environmental Cooperation (CEC) provides an overview of several key programs in Canada, Mexico and the United States established to recognize and promote environmental characteristics or attributes of products and services.<sup>1</sup> This report provides a synthesis of three separate reports prepared by three consulting firms in Canada, Mexico and the United States around issues of labeling, certification and procurement.<sup>2</sup> Readers interested in obtaining copies of the full reports, please contact the CEC at the address below. Given the broad range of public and private sector schemes in place in the three NAFTA countries, this report is intended to be illustrative of key programs, rather than comprehensive. Put another way, it is not feasible to review all programs in place in the three countries, in large part because both environmental policy and markets are highly dynamic, constantly evolving, merging and changing.

Some of the initiatives that have taken place between 1998 and 1999 illustrate the breadth of this topic area:

- July 1998: The European Union finalized its rules governing the labeling of foods containing genetically modified soy or maize. Products will require a label indicating that they have been “produced from genetically modified soya” (or maize), provided modified protein or DNA can be detected in the finished product. The EU rule states that foods containing genetically modified additives such as soy lecithin do not require to a label.
- August 1998: The US Northeast Recycling Council (NERC) announced the establishment of a network linking government and private-sector officials charged with purchasing environmentally preferable products and developing “greener” procurement policies. The Environmentally Preferable Products Procurement List (EPPNET) is designed to provide quick access to information on the availability of product specifications, lists of vendors, pricing information, strategies for achieving recycled product procurement goals, and federal procurement policies.
- November 1998: The US National Wildlife Federation (NWF) and the Forest Stewardship Council (FSC) extended their cooperative forest certification project, to include certification of not only lumber products but of any forest product.
- December 1998: (Western) European companies and organizations had over 4,000 certifications of ISO 14001, while Asia-Pacific reported 2,778 certifications (of which Japanese companies comprised roughly one half), and North American companies reported 317 certifications, Latin America 113 certifications, Eastern Europe 70, and Africa and the Middle East 59 certifications of ISO 14001.
- May 1999: Several companies based in Manitoba, Canada, together with provincial and federal government agencies, established the Manitoba Green Procurement Network (MGPN) to implement guidelines for environmentally responsible procurement (ERP). Several pilot projects are in various

<sup>1</sup> Attributes refer to certain characteristics of the product.

<sup>2</sup> This synthesis Report is based on input from the Delphi Group of Canada, Marketing Strategies International of Mexico and ABT of the United States. For readers interested in obtaining the complete versions of these individual reports, please contact the Trade and Environment Unit, CEC. This Report has been prepared by Scott Vaughan, Ania Brzezinski and Andrew Horsman of the CEC Secretariat. The authors may be contacted by mail at 393 St. Jacques Ouest, #200, Montreal (Quebec) Canada, H2Y 1N9, Tel: (514) 350-4300, Fax: (514) 350-4314.

stages of development, including expanding the use of recycled paper, creating a materials management database for hazardous substances used in the construction industry, and developing life cycle costing tools.

- May 1999: The International Biodegradable Plastics Institute (BPI) was launched, with the mandate of promoting the production, use, and recovery of “truly biodegradable” plastics. In cooperation with the US Composting Council, BPI plans to develop a certification process and logo to identify biodegradable plastic products.
- July 1999: The UN Codex Alimentarius Committee Task Force announced it will “develop standards, guidelines, or other recommendations, as appropriate, for foods derived from biotechnology or traits introduced into foods by biotechnology, on the basis of scientific evidence, risk analysis, and having regard, where appropriate, to other legitimate factors relevant to the health of consumers and the promotion of fair trade practices.”
- July 1999: The US Environmental Protection Agency (EPA) releases a draft proposal recommending Simpler Labels for Consumer Household Products. The draft recommends that manufacturers should voluntarily place “bullet points” on the front of labels to explain precautions associated with products. The word “caution” should be omitted from the labels of lower toxicity products (category 4 or lower), and the statement “It is a violation of Federal Law to use this product in a manner inconsistent with its labeling” should be replaced with the statement “Use only as directed on this label.” The EPA recommends greater use of common names of pesticides’ active ingredients on labels. The EPA also recommends distinguishing between agricultural and consumer pesticide labels. The next phase of the EPA initiative will be a public campaign focusing on the importance to consumers of reading labels.
- August 1999: Starbucks Inc., in cooperation with Consumers International, introduces Mexican shade-grown coffee for an initial trial period in 50 major markets in the United States. (Starbucks pamphlet 1999).

*Estimates suggest annual expenditures in the US on the environment are US\$180 billion, in Canada they are C\$22 billion, and in Mexico they are in the vicinity of US\$4 billion.*

### Market-based Instruments: Background and Context

Green labels, certification schemes and environmental purchasing programs are intended to harness the power of markets in pursuit of environmental objectives. Other examples of market-based instruments include environmental charges, user fees, taxes, subsidies, deposit-refund systems and other mechanisms, all designed to provide decision makers with incentives and disincentives relating to the relative environmental characteristics of goods and services.<sup>3</sup>

Despite differences among programs both within and between the three NAFTA countries, the programs nevertheless share the view that environmental protection can be pursued by providing decision-makers with information about the *relative* environmental attributes of products and services purchased in the marketplace.<sup>4</sup> As a general point, market-based instruments complement more traditional command and control regulatory approaches. Together, they form a “policy menu” to help meet environmental goals.

### Environmental Markets: Scope and Characteristics

Given that the purpose of green labels, certification and procurement policies is to harness markets, the question should be posed at the outset. First, to what extent do green labels increase sales of a particular good or service. And second, is there such a thing as an environmental market, and if so, what is its scale and composition? A recent report by the Organization for Economic Cooperation and Development (OECD) points to

<sup>3</sup> Extensive work exists on the design, implementation of different market-based instruments. See, for example, Robert Repetto et al., *Green Fees*, World Resources Institute, 1995 and Theodore Panayotou, *Green Markets*, HIID, 1993.

<sup>4</sup> Decision makers in this report refers to both persons and institutions making purchasing decisions, and includes, but is not limited to, individual retail consumers, retailers, wholesalers, and suppliers, manufacturers who purchase manufacturing inputs and raw materials, and private and public institutions that purchase goods and services in large quantities.

“some scattered anecdotal evidence” showing that sales of a particular product have increased when an eco-label has been obtained. However, there is no statistical data providing quantitative evidence of the actual market penetration of green labels, nor the average market power that an eco-label is likely to confer on a product or services.<sup>5</sup>

In a report published by Consumers International (CI), the authors outline the evolutionary paths of eco-labeled product markets. There are three possible outcomes to the introduction of an eco-labeled product:

1. *Market Standard:* Eco-label is widely accepted and becomes standard in the marketplace. Labeling is the “price of entry” for competition.
2. *Market Niche:* Eco-label is viable but not as widely accepted. A profitable market niche for labeled goods develops.
3. *Market Failure:* Label is not accepted by customers and fails. (CI 1999)

After the introduction of an eco-labeled product, the degree to which it penetrates the market is subject to consumer demand and consumer attitudes and behavior.

At present, the market for products bearing an eco-label is immature, and so market size is small. This means that most labeling programs will not reach the market standard classification but will only evolve to niche markets (CI 1999). The reason for this is that consumers are at a stage where they are not aware of the issues and benefits surrounding eco-labels. According to CI, only 8 percent of consumers are willing to pay a price premium for products bearing a label. The success rate of the labeling programs is higher if the focus of the labels is on the direct health implications of the product. The same conclusions were arrived at in a project done by the CEC on shade-grown coffee. The data collected in that case indicated that consumers were more receptive to paying a price premium if the advertising for the product focused on the health and taste benefits (“grown without the use of pesticides and other chemical inputs,” “shade cultivation allows the sugars in the beans to develop more slowly, resulting in a sweeter tasting, richer cup of coffee”) over the environmental advantages (CEC 1999).

Consumer attitudes are a function of the developmental phase of the environmental issue. CI recognizes four distinct phases of development:

- Phase 1: Awareness—Consumer first becomes aware of the issue; limited information and confusion.
- Phase 2: Anxiety—Customer anxiety toward issue is high; activity is relatively low.
- Phase 3: Information Gathering—Customers become more informed about issue; activity begins to overtake anxiety.
- Phase 4: Activity—Activities become integrated into people’s lifestyles. (CI 1999)

As an example, climate change and global warming would be classified as being at Phase 1, while recycling and waste reduction would be at Phase 4. In order for an eco-labeling initiative to be broadly accepted, the issues surrounding labeling would have to be made more prominent so that consumers would actively look for the labels, and choose of their own volition to purchase labeled products (Phase 4: Activity)(CI 1999).

Estimates of the size and characteristics of the environmental goods and services sector remain imprecise. There are different reasons for this, including the absence of a harmonized system of product and service categories or definitions, as well as the absence of a clear definition of what constitutes an environmental expenditure. (For example, while solar energy would be considered an environmental good, it is less clear if a drainpipe, which contributes to an environmental service, is itself a green good.)

Nevertheless, recent estimates suggest that environmental expenditures are considerable. The estimated total annual expenditures in the United States (1997) for environmental goods and services is in the range of US\$180 billion.<sup>6</sup> Other studies suggest that, since the implementation of domestic environmental laws in the early 1970s, an estimated US\$1 trillion has been spent on the environment in the United States.<sup>7</sup> Statistics

<sup>5</sup> OECD 1999, Towards Sustainable Consumption Patterns: A Progress Report on Member Country Initiatives.

<sup>6</sup> David Berg and Grant Ferrier, “Meeting the Challenge: US Industry Faces the 21st Century: The US Environmental Industry,” I.S. Department of Commerce, Office of Technology Policy, Washington, September 1998.

Canada estimated in early 1999 that the size of the Canadian environmental goods and services sector is C\$22 billion per year (1997). Estimates similarly suggest that annual expenditures in Mexico are in the range of US\$4 billion per annum (1998), representing a 19 percent increase in expenditures from 1997. Overall the current global market for environmental expenditures is conservatively estimated to be US\$400 billion, which is expected to rise to US\$600 billion during the next decade.<sup>8</sup> This latter figure may underestimate expenditures related to the implementation of the Kyoto Protocol.

### **Market Scale for Green Labels, Certificates and Procurement**

Impressive though aggregate expenditures are, it is important not to confuse total environmental expenditures with expenditures directed toward green labeling, certification and environmental purchasing schemes. Clearly, the latter represents a small proportion of the total amounts involved. The question of just what proportion remains surprisingly unclear, since quantitative data is practically nonexistent in such areas as market share or the total dollar/peso value of schemes in place in the three countries.

The example of environmental labeling helps explain this lack of aggregated financial data: due to the decentralized, uncoordinated and fragmented nature of different green labeling programs in the United States, and the infancy of such programs in Mexico, data on total expenditures remains scarce.

By contrast, quantitative data about government and institutional procurement schemes is relatively more accessible, reflecting the concentration of institutional or large retail buyers. In the middle, environmental certification appears to be concentrating both on environmental management systems (EMS) as well as large-scale or institutional buyers. Hence, there is a stronger relationship between certification and procurement programs both in operation and data availability than there appears to be between green labeling and procurement.

Three additional points are noted in assessing the role of market-based instruments.

First, schemes discussed in this report provide information about products and services that at least comply with, and for the most part exceed, minimum domestic environmental regulatory requirements. Put another way, while all environmental performance, product standards, use, disposal, and other stages must meet relevant domestic environmental regulations, labeling or similar schemes generally convey to consumers information about environmental product characteristics or performance standards that exceeds minimum regulations.

This distinction between minimum compliance and performance above mandatory levels is important for two reasons: (a) estimates of total environmental expenditures are dominated by expenditures required to meet statutory or regulatory thresholds. By contrast, environmental labeling and certification represent a small proportion of total expenditures. And (b) compliance over and above regulatory requirements might help explain the lack of sustained market penetration of many eco-labeling programs. Some studies suggest that the public has sufficient trust in the capacity of governments to set and implement environmental regulations, and therefore do not make the connection between personal purchasing habits and environmental protection. Put simply, people have confidence that their governments are doing enough to protect the environment.

The second issue is related to concerns surrounding regulatory compliance. Most labeling and certification schemes tend to exclude toxic or human health-related risks. The important exception dealing with this issue concerns hazard-warning labels. As the objective of marketing and communication schemes based on comparative environmental attributes is to encourage behavioral shifts in consumption habits, such schemes are generally regarded as being sub-optimal or inappropriate to ensure the protection of human health. Rather than a communication-type instrument, blunter mechanisms based on strict regulations are necessary to control potentially acute environmental damages linked to human health risks.

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<sup>7</sup> Stephan Schmidheiny, *Financing Change: The Financial Community, Eco-Efficiency and Sustainable Development*, MIT Press, 1996; and S. Vaughan, *Greening Financial Markets*, UNEP, Geneva, 1995.

<sup>8</sup> Carol Browner, administrator, United States Environmental Protection Agency, Testimony to the Committee on Finance, United States Senate, 28 January 1999, Washington.

There is now a view among some experts that earlier expectations about the effectiveness of eco-labeling were too optimistic. In contrast to some eco-labeling schemes in the Nordic countries or Germany's Blue Angel program, which have garnered a sizeable market share, eco-labels in North America have not performed as strongly as envisioned.<sup>9</sup> This cannot be explained by a significant difference in concern about the environment between North America and Europe. Indeed, trends of concerns among the public are very similar. The most obvious explanation is differences in the underlying approach, design, marketing, role of government agencies and other variables in how such labeling schemes actually work. A more general explanation may be found in the distinction between citizens and consumers. While citizens voice concern about the environment in opinion polls, that concern has not been translated into a demonstrated willingness by consumers to purchase green goods and services, especially if a price premium is involved.<sup>10</sup> The optimism of eco-labels may have sprung from the assumption that concerned citizens and consumer action were symmetrical. A decade of flat performance by eco-labels makes it clear that such assumptions were misguided. *Tomorrow* magazine recently pointed to the "oceanic gulf between what people tell pollsters they'll do (pay premium prices for greener goods) and what they do in practice (shrug and get the cheap stuff)."<sup>11</sup>

A Canadian polling firm (Enviro-nics) recently predicted a "great green wave" springing from growing public opinion about environmental protection in general, and very high consumer concern about linking environmental protection with human health issues.<sup>12</sup> A 1998 poll by Wirthlin Worldwide found that 63 percent of Americans agreed with the statement that "environmental standards cannot be too high" and "improvements must be made regardless of cost," a decline of 13 percent from 1997.<sup>13</sup>

Finally, the reason why market share, or total value, is important is not because it provides a general indicator of the *environmental effectiveness* of different schemes. Since the purpose of this report is not to assess the environmental effectiveness of schemes, but rather to present information on them, a general indicator of effectiveness would be the market share of different schemes. This simple indicator assumes that environmental effectiveness can be measured by the extent to which they attract and sustain market demand for environmentally preferable products and services, on the assumption that a robust demand for environmentally preferable goods and services should yield corresponding benefits in terms of environmental protection. (While all products have absolute environmental costs, green labels or schemes promise to be less environmentally harmful compared with average products or services within a category.)

<sup>9</sup> For example, the Swedish Environmental Choice (SSNC) label, launched in 1987, awards labels for over 1,300 products in 13 different product groups. Almost all washing machines sold in Sweden now carry an eco-label. Recently, the label has gone into new areas, including certifying green electricity (50 labels have been awarded), and transport (10 labels have been awarded for public transport, and 6 labels for freight transport). Germany's Blue Angel, established in 1978, covers approximately 4,500 products in 79 product groups from roughly 940 manufacturers. Within its product categories, Blue Angel has a target of labeling 20 percent of products. Recent trends suggest that while demand among institutional and large retail buyers remains stable and growing, by contrast polls between 1993 and 1998 suggest that fewer consumers were considering Blue Angel labels in their purchasing decisions. For more information about Sweden's label, contact <<http://www.snf.se>>, and for Blue Angel, contact <<http://www.blauer-engel.de>>.

<sup>10</sup> A recent analysis by the Commission for Environmental Cooperation found that in a specific product area—that of shade-grown, environmentally-friendly coffee grown in Mexico—consumers in Canada, Mexico and the United States all expressed a remarkably uniform interest in linking purchasing decisions about coffee with environmental benefits.

<sup>11</sup> Wright, Martin, "You Say Goodbye and I Say Hello," *Tomorrow*, Number 6, Vol. VIII, December 1998.

<sup>12</sup> Synergistics National Opinion Research, 1996 and Enviro-nics International 1997. The Canadian report found that one of the strongest areas of interest among consumers is environmental health. Specifically, it was found that consumers were strongly interested in the environmental attributes of the following products:

- products used in the home that do not negatively impact air quality (e.g., offgassing in carpets, VOCs in paint)
- water and air filters, carbon monoxide detectors, organic produce; and
- building designs that reduce health risks.

<sup>13</sup> Wirthlin Worldwide, *Environmental Support Softens Amid Economic Uncertainty* <<http://www.wirthlin.com>> cited in *Tomorrow Essentials*, November 1998.



# **Section One**

## **Environmental Labeling**





## Environmental Labeling

Environmental labeling\* refers to labels that inform consumers that a labeled product is environmentally more friendly relative to other products in the same category. Before describing the different labels in place in the three countries, it is worth noting that considerable attention has focused in recent years on the trade dimensions of eco-labels. Among the interests of trade policy in environmental labeling is the extent to which foreign firms have access to both labels themselves and to the manner in which labeling criteria is set.

There are numerous steps in the development of a national eco-labeling program. These are:

- evaluate the needs (determine economic, environmental and policy conditions; assess available funding, expertise and level of determination; test program consistency with national objectives and consider alternatives);
- lay the foundation (collect and analyze industry, market and environmental data; determine relevant public attitudes and public policy context; propose program focus options; prepare program parameters);
- design the program (consider objectives and operational requirements; recommend and define major activities and delivery options);
- develop the business plan (prepare the document including the context, forecasts and action plans); and
- implement the program (begin operations; develop criteria; certify products; communicate; report annually).

(TerraChoice Environmental Services Inc. 1997)

### Categories of Environmental Labels

There are three general categories of environmental labels:

*Type I:* These are based on environmental criteria established by a third party. They are third-party, voluntary schemes, which identify products that are relatively less harmful to the environment than similar products in the same category. The selection of product categories and the setting of criteria for awarding the label are undertaken by a board or committee, based on different types of consultative processes involving different interest groups (industry, environmental nongovernmental groups, consumer groups, environmental risk assessment experts). Right-to-know environmental labels are usually awarded for a fixed time period, and there is for most schemes an administrative cost or other expense involved in using the labels on products.

Environmental criteria are usually designed to allow for only a certain portion of the total market of a given product category. The portion changes based both on the labeling scheme and the product involved. For example, Germany's Blue Angel program targets approximately 15 to 25 percent of products in the marketplace. Environmental criteria are usually revised every three to five years to keep pace with changes in environmental knowledge and information.

*Type II:* These are based on manufacturers' own claims that their products have specific environmentally-friendly attributes. There is no pre-established definition or criteria with which Type II labels need to comply from an environmental perspective. However, such labels do need to meet trust in advertising or other product claim standards.

*Type III:* These are based on product information that provides environmental information, but does not compare or weigh different aspects of this information. These labels include different indices of environmental characteristics. They often lack a harmonized way of aggregating and communicating environmental criteria, based on both the selection of specific technical criteria and the overall weighting of criteria. For example, Type III labels can include an energy profile that lists the amount of energy inputs required to produce the product. The problem with what may appear to be a straightforward indication of environmental quality is that, given different energy sources—renewable versus natural gas versus nuclear—such a numerical representation of an energy index may say little about the comparative environmental effects of different energy sources available to producers.

\* The labels and logos mentioned in this document are registered marks. However, to streamline presentation, "TM" and "CM" do not appear after each.

**Positive and Negative Labels**

Another useful distinction between approaches to environmental labeling is whether they convey positive, neutral or negative information to consumers about the environmental attributes of products. Positive labels usually communicate information about one or more environmentally preferable attributes of the product. Neutral ones report summary information about the product(s) that decision makers can consider when they decide whether to make a purchase. Negative labels warn decision makers about the harmful or hazardous ingredients in the product (US EPA December 1998). Examples of positive, neutral and negative labels appear below.

**Verification of Labeling Claims**

Finally, an important question that has been posed since labeling and certification schemes were launched is, How does one know that claims made in the label are actually true? Because of the difficulties of defining what product is “green,” and making comparisons between products with varying environmental attributes, purchasers frequently find themselves in the awkward position of green arbiter. Most purchasers state clearly that they would rather have an external body make these judgments for them. Programs such as Environmental Choice address this concern.

The verification of compliance with different environmental criteria is an important issue, not only in the context of green labels and certificates but also in other areas of market-based environmental policy. Two types of verification mechanisms exist for environmental labeling:

- A. *First-party verification.* This kind of verification is performed by marketers on their own behalf to promote the positive environmental attributes of their products. One example of this approach is refrigerators that bear “No CFCs” or “Ozone Friendly” labels.
- B. *Third-party verification.* This is carried out by an independent organization that awards labels to products based on certain environmental criteria or standards that they set. Environmental labeling programs can also be characterized as positive, negative or neutral. Positive labeling programs typically certify that labeled products possess one or more environmentally preferable attributes. Negative labeling warns consumers about the harmful or hazardous ingredients contained in the labeled products. Neutral labeling programs simply summarize environmental information about products that can be interpreted by consumers as part of their purchasing decisions.

Third-party environmental labeling programs can be further classified as either mandatory or voluntary. Hazard/warning labels are by definition mandatory (they are usually implemented by the government), because they highlight the negative attributes of a product. Information disclosure programs are also often mandatory, but they are neutral in that they simply present information about the product without placing any judgment on the product’s impact. Voluntary labels are typically positive or neutral, and are further classified as either seal-of-approval, single-attribute, or report-card certification programs.

Relationships between program characteristics and label type are shown in the table below.

|                  |                                      |                       |                        |
|------------------|--------------------------------------|-----------------------|------------------------|
| <b>Mandatory</b> | N/A                                  | Hazard/warning labels | Information Disclosure |
| <b>Voluntary</b> | Seal-of-Approval<br>Single Attribute | N/A                   | Report Card            |

Third-party labeling programs differ dramatically in their mission statements, mandates (for governmental programs), type of sponsoring organization, and other associated activities. Assessments may be based on single environmental criteria, such as recycled content, or a full “cradle-to-grave” life-cycle assessment (LCA) of a product’s consequences. The assessment performed by a third-party labeling program ensures that the product has met the standards set by the program and therefore the environmental superiority of the product or service.

### ***Life-Cycle Assessment***

Different labels include some or all aspects of life-cycle assessment (LCA). Despite work in this area for some time, there is not a standard application of LCA and how many environmental criteria considered in a full or partial LCA are weighed, aggregated and communicated in a Type I, Third-Party Label.

Evaluating the environmental attributes and impacts of a product requires some form of life-cycle assessment (LCA). Though numerous methods exist for performing LCA, the process can be immensely complicated. This need not, however, be an obstacle to providing data and conclusions for the layperson in a simplified format. Some efforts to reduce the cost and time requirements of performing an LCA have left the process open to criticism for inadequate rigor or transparency. Both producers and consumers are increasingly voicing support for efforts to standardize both the LCA process and the presentation of findings. A draft ISO standard on LCA is now available and progress continues toward finalizing this.

An ongoing debate surrounds the appropriate uses of LCA findings. While there is widespread support for the use of LCA studies insofar as they offer guidance to producers, who need to understand the environmental impacts of their processes and the various trade-offs available to them, such internal applications of LCA differ from its use as a comparative tool by purchasers. Proponents of ecolabeling feel that a credible LCA “report card” similar to the nutrition labels found on consumer products would be an invaluable tool for purchasers who want to compare the environmental impacts/attributes of competing products. Strong contrary views have been expressed by both producers and governments. The debate hinges on whether or not such LCA-based “report cards” can accurately reflect the complex and imprecise science of determining environmental impacts, and, if so, whether such information can or should be used to compare material and product choices (i.e., cloth vs. disposable diapers or two telephones produced in different countries).

### ***Product Stewardship***

An increasingly important approach used by the private sector is “product stewardship,” an approach based on a partial “cradle-to-grave” approach to take into account environmental characteristics of the production process, coupled with measures to encourage the safe use and disposal of products after they have been sold to industrial customers.

For example, environmental attributes such as energy consumption and disposal requirements for individual parts and hazardous materials used during manufacturing may be recorded (US EPA December 1997). However, unlike a full LCA, product stewardship programs create a checklist of the environmental attributes of the product during manufacturing. There is no analysis about alternative methods available to reduce environmental impacts. More significantly, unlike LCA, product stewardship only looks at the environmental attributes of a product while it is under the control of the producer—during product development, manufacturing and distribution. It does not analyze the “upstream” (e.g., raw material extraction) or “downstream” (e.g., final disposal of the product itself once it has reached the consumer) environmental impacts of the product.

Environmental attributes of products and their upstream production profile and downstream recyclability are not always readily apparent. For example, it can be difficult to decide which environmental variable is the most important: for instance, is it more important that products contain recycled content or be biodegradable? What if these attributes are at odds with each other? Often, the importance attached to one type of environmental criterion over another may reflect local public preference or conditions. For example, recyclability may be the most important environmental attribute for some labels, reflecting a concern about landfill scarcities in a region. However, for products produced in regions in which there is landfill abundance, recyclability may be less important than other attributes. Likewise, consideration of a product’s water usage may be particularly relevant in areas with dry climates but not as important in temperate or tropical climates. Even when examining single environmental characteristics such as biodegradability or toxicity, there are conflicting opinions about how to measure these characteristics (i.e., at which point in the product’s life cycle). For these reasons, programs that evaluate environmental attributes of products simplify their analysis to be feasible given available information and to reduce the cost of product assessments.

To avoid distorting environmental information, various efforts continue to develop more “objective,” or neutral labels, that convey environmental profiles through the reporting of different indices. For example, businesses in the United States exchange information through material safety data sheets (MSDSs), or through product stewardship programs. Labels on product containers can also convey environmental information through environmental marketing claims such as “recyclable.”

## Examples of Environmental Labels

### *Canada*

#### **Guiding Principles for Environmental Labeling and Advertising**

Canada's Principles and Guidelines for Environmental Labeling and Advertising have been developed by the federal government to address truth in advertising and help ensure the credibility of green marketing claims. These principles and guidelines were developed in 1993 in the context of the Consumer Packaging and Labeling Act and the Competition Act, both of which contain broad prohibitions against false and misleading representations. Among the guidelines are:

- claims should be based on recognized standards or prevailing scientific principles;
- vague statements (e.g., environmentally friendly) should not be used;
- claims in source reduction must relate to the reduction of toxic materials or reduced levels of toxicity;
- claims made regarding reduced materials use should be compared to product or packaging relative to predetermined reference point;
- to claim reusability, a reuse "infrastructure" must exist;
- the Mobius Loop recycling symbol to indicate that a product is recyclable should not be used if less than one third of the population in which the product is distributed has convenient access to recycling facilities;
- claims of recycled content may be made using the Mobius Loop with a recycled content disclosure as a percentage, by weight, of the product or total material. It will be assumed that the recycled components are "post-use" materials;
- claims about degradability should be accompanied by a statement indicating the conditions under which degradation will occur, or a recognized test method that was used to determine the degradability (e.g., OECD test no. 301B); and
- claims that products or packages are compostable should be supported by competent and reliable scientific evidence. Claims should be qualified where materials are compostable in municipal or large-scale composting operations.

All environmental labeling and related schemes should comply with these basic principles.

#### **EnerGuide Label**

The EnerGuide label is issued by the federal government's Natural Resources Canada and is used to indicate to consumers the energy consumption of an appliance. All major electrical appliances sold in Canada are required to have an EnerGuide label. As a Type III label, the program does not award a seal of approval, but instead provides consumers with a basis on which to compare like products. An EnerGuide label means that the appliance or room air conditioner meets the minimum energy efficiency standard set out in the Energy Efficiency Regulations.

The EnerGuide label for appliances shows how much electricity in kilowatt-hours (kWh) an appliance consumes in a year. For example, the EnerGuide label for room air conditioners shows the energy-efficiency rate (EER) for one year. Manufacturers are provided with an EnerGuide labeling kit, at no cost, with all the necessary information to print the label. However, appliances must be tested according to specified standards. Therefore manufacturers must pay to have their appliances tested and must provide EnerGuide with those test results before the EnerGuide labeling kit is issued.

#### **PowerSmart**

The PowerSmart program is administered by British Columbia Hydro. For a product to be eligible for the PowerSmart label, it must provide energy savings for the end consumer. The product must meet established PowerSmart criteria for the particular product category. If a category does not exist, BC Hydro will consider creating a new category and developing the criteria. The annual fee is C\$750 for which manufacturers have use of PowerSmart labels and promotional materials. BC Hydro promotes products through a number of communications channels.

Categories currently consist of:

- Building-envelope Materials (e.g., caulking materials, skylights, storm windows, weather-stripping, etc.);
- Appliances (clothes washers, dishwashers, refrigerators, freezers, water heaters);
- Electrical Goods (block heater controllers, dimmer switches, photocells, etc.);
- Lighting (e.g., compact fluorescent fixtures, electronic ballasts, low-wattage exit signs, night-lights, etc.);
- Water-saving Devices;
- Heating, Ventilation, Air-Conditioning (HVAC) (dehumidifiers, heat pumps, heat-recovery ventilators, room air conditioners); and
- Miscellaneous (spa covers, swimming pool covers).

Although PowerSmart is currently only established in BC, it is considering a national campaign to promote the label and its endorsed products.

### **The Workplace Hazardous Materials Information System (WHMIS)**

The Workplace Hazardous Materials Information System recognizes that workers have the right to know about hazardous materials in the workplace. WHMIS is a Canada-wide system, under which information must be provided in three ways:

- labels on containers of hazardous materials;
- Material Safety Data Sheets (MSDSs), which must be accessible to workers; and
- worker education and training programs.

WHMIS applies to hazardous materials called “controlled products.” A controlled product is any product that can be included in any of the following classes:

- Compressed Gas,
- Combustible Material,
- Oxidizing Material,
- Poisonous and Infectious Material,
- Corrosive Material, and
- Dangerously Reactive Material.

The classification of a controlled product determines which hazard symbol must appear on the WHMIS label.

### **Environmental Choice**

The most prominent environmental labeling program in Canada is the Environmental Choice program. Established in 1988, Environmental Choice has awarded labels to approximately 200 companies covering 2,000 products and services, under roughly 100 categories for products and services. The Environmental Choice Program awards an EcoLogo to products and services that meet four major areas of focus—life cycle impacts, company compliance with relevant health, safety and environmental laws, minimization of packaging, and environmental performance requirements. To obtain the EcoLogo a product or service must be made or offered in a way that either:

- improves energy efficiency;
- reduces hazardous by-products;
- uses recycled materials; is re-usable, or
- provides some other environmental benefit.

In addition, certified products or services should meet or exceed any applicable industry-specific safety and performance standards. Companies and products from any country are eligible.

Originally established by the Canadian federal government, the management and delivery of the Environmental Choice Program was turned over to TerraChoice Environmental Services Inc., a Canadian consulting company, in September 1995. Since the involvement of TerraChoice, revenues and participation in the program have doubled. While information on the percentage of market share of sales within a product category are not

available, 1999 sales in products and services that have an Environmental Choice label were estimated in 1998 to be in the range of C\$3.26 billion (Koepke October 1999).

### Compliance and License Renewal

A company may have its product or service certified in one of the following ways:

- the product or service meets or exceeds the environmental criteria outlined in Environmental Choice Program (ECP) guidelines; or
- if no criteria exist for the product or service type, a panel of experts convened by the ECP (Panel Review Process) determines that a specific product or service has significantly less adverse environmental impacts than competing products or services.

Products and services certified against guideline criteria remain certified as long as compliance with pertinent criteria is maintained. Licensed companies must submit annual attestations confirming their continued compliance. ECP reserves the right to conduct random inspections or product testing to confirm continued compliance. Costs of activities are the responsibility of the ECP.

Products and services certified against panel criteria remain certified for at least two years at which time the panel reviews whether initial claims and assigned criteria remain relevant.

### Product Categories and Labels Awarded: Some Examples

**Appliances:** In Canada, major appliances account for 20 percent of residential energy consumption and more than 4 percent of total energy consumption.<sup>14</sup> Although energy inputs are required during the production of major appliances, more energy is required during the operation of such appliances. In fact, total energy required to manufacture an appliance usually accounts for two months of appliance operation. Within this category are household dishwashers and household washing machines. Typically, each product grouping has 10 to 15 environmental criteria. Examples of criteria in the household dishwasher grouping include:

- must not exceed a water consumption of 25.0 liters per normal cycle;
- must filter 100 percent of used water; and
- must not exceed noise levels of 60.8 dB.

**Automotive Products and Lubricants:** Seven products fall under this category, including anticorrosive products for mechanical vehicles, automotive tires, commercial car-wash services and cleaning products, ethanol-blended gasoline and synthetic industrial lubricants. Environmental Choice notes that using these products promises to deliver considerable environmental benefits, in terms of reduced pollution levels and lower amounts of nonrenewable resources used during the product's life. Among the environmental criteria in this group are: maximizing levels of recycled content, stringent guidelines for re-refining processes, proper disposal of by-products, and/or maximizing the use of nonrenewable resources. Environmental criteria for these product categories differ between categories. Examples of criteria for car wash services include:

- all wastewater must be passed through an interceptor before being discharged into a sanitary sewer;
- services must have a comprehensive water conservation program; and
- car wash chemicals must be inherently biodegradable.

By contrast, environmental criteria for the synthetic industrial lubricants category establish more technical environmental criteria, including:

- must not contain more than 3 percent of an additive that is not proven to be biodegradable;
- must not contain organic chlorine or nitrate compounds, lead, zinc, chromium, magnesium or vanadium; and
- must be proven to have good oxidation stability when tested according to ASTM D525 *Standard Test Method for Oxidation Stability of Gasoline*.

Approximately 25 companies have been awarded labels under this category, including Imperial Oil, Canadian Tire, Home Hardware Stores Inc., Mohawk Oil Co., Michelin North America, Mondo Products Co., UPI Inc., and Union Carbide Canada.

<sup>14</sup> Information from Environmental Choice, The EcoBuyer Catalogue, Volume 2, Number 1, 1998.

**Building, Grounds and Construction:** Twelve product categories are included in this general category; they are:

- Battery-powered Lawn Mowers,
- Compost Toilets,
- Compressed Firewood,
- Driveway Sealer,
- Gypsum Wallboard,
- Safety Fence/Snow Fence,
- Shingles,
- Steel-reinforced Composite Structural,
- Thermal Insulation,
- Turf Management Systems (organic),
- Water-conserving Shower Heads, and
- Water-well Rehabilitation Services.

As in other broad product categories, environmental criteria differ between subproduct groups, reflecting important distinctions between product areas. At the same time, a general emphasis of certification criteria involves maximizing the recycling of materials, minimizing or eliminating the use of toxic products during manufacturing, and resource conservation. For all products and services in this category, criteria include an obligation to at least meet or exceed accepted industry performance and durability standards. Approximately 23 companies have been awarded labels for products and services in this category. These companies include: Black and Decker Canada, DuPont, Can-Cell Industries and Aqua Feed Canada.

**Cleaning Products:** There are three major categories of cleaning products covered in the *EcoBuyer Catalogue*:

- General Purpose Consumer Cleaners;
- Industrial and Institutional Cleaners; and
- Liquid Laundry Detergent and/or Fabric Softener.

The certification criteria for these substances are similar. Certain chemicals must not be present in the manufacturing process, such as phosphates, EDTA (ethylene diaminetetraacetic acid), or APEOs (alkylphenol ethoxylates). The content of VOCs (volatile organic compounds) must not exceed 10 percent by weight. The compound must be readily biodegradable, and must be nontoxic to aquatic life.

For the Industrial and Institutional Cleaners category there are additional criteria that must be taken into account. They must have zero ozone depletion potential (ODP), must not have a pH lower than 2.0 or higher than 13.0. They must not be formulated with more than 1 percent EDTA and more than 5 percent nitrilotriacetic acid (NTA). They must not be corrosive to skin and must be clearly identified as a product not intended for household use or not to be sold for household use. These compounds must not have a greater concentration than 0.1 percent of any ingredient that meets one or more of these criteria:

- is very acutely toxic;
- is acutely toxic and bioaccumulating;
- is acutely toxic and not readily biodegradable; and/or
- is bioaccumulating and not readily biodegradable.

The quantities of cleaning products that are used each year in Canada makes the adoption of EcoLogo products very attractive in terms of reducing the environmental impact of their use. There are a number of companies that manufacture these products for both general purpose and industrial/institutional use. Bebbington Industries, Enviro-Solutions Ltd., Puresource Inc. and Green Knight are some of the companies that distribute such products.

**Marine Products:** The products covered by the EcoLogo are generally small-boat-oriented products. They are not applicable to the shipping industry. These product categories are:

- Clay Fishing Sinkers;
- Marine Foul Release Coatings; and
- Marine Inboard/Outboard Engine Oil.

The foul release coatings and engine oils both must contain chemical concentrations below certain levels. The coatings must not contain VOCs in excess of 120g/L, must not be manufactured or contain aromatic solvents in excess of 2 percent by weight, and must come with instructions for safe and proper application/removal, and with instructions for proper disposal of any unused product. There must be no toxic metals or biocides in the product.

Marine engine oil must come with the same instructions as the foul release coatings, and must satisfy all current performance standards for marine engine oil. The base stock for the oil must contain at least 55 percent re-refined oil by volume and must not contain greater than 5 ppm of benzopyrene and benzoanthracene. Shell Canada manufactures this product.

The fishing sinkers must be manufactured from clay that has not been glazed and that has not been extracted from the Niagara escarpment.

**Noncommercial and Consumer Products:** Although the use of these products is limited in the commercial environment, they are still represented in the EcoLogo program, as they are more environmentally benign than the other alternatives. These products are:

- corporate gifts and incentives,
- organic cotton clothing,
- cotton swabs,
- cotton diapers and incontinence products,
- mattresses,
- reusable bags, and
- sanitary napkins.

The criteria for the majority of these products relate to their biodegradability and recyclability. Cotton diapers and incontinence products may be reused and therefore reduce the load on landfills. This also applies to reusable bags and mattresses, which may be treated and reconditioned. Sanitary napkins and cotton swabs must be biodegradable at a rate of 60 percent in 60 days. Cotton clothing must be organically grown (without chemical fertilizers or pesticides), made without any dyes, and manufactured without any chemical treatments. Corporate gifts, such as sculptures, made from recycled plastic reduce the amount of plastic going into landfills. Many companies manufacture the types of products listed above: Lever Pond's makes Q-Tips, Recover Canada reconditions mattresses, and Oasis makes reusable bags.

**Office Products:** The office product category includes:

- fax machines,
- plastic stationery products,
- photocopiers,
- printers,
- printing cartridges,
- rechargeable batteries, and
- shipping tags.

All these products are not only produced in such a way that the environmental impact of their manufacture is reduced, but they are also designed in such a way that their operation is less harmful to the environment. No CFCs are used in the production of any of these machines; their energy consumption must meet the conditions of the US EPA's "Energy Star" Program. Ozone concentrations produced during normal operation must not exceed 0.04mg/m<sup>3</sup>, and products requiring toner cartridges must be compatible with remanufactured cartridges and able to use recycled paper without voiding the warranty.

Plastic stationery products must contain at least 90 percent (by weight) recycled plastic (for mixed plastics only, all products made using generic recycling must contain a minimum of 25 percent by weight recycled plastic). Shipping tags must be made from paper containing more than 50 percent (by weight) recycled paper and more than 10 percent postconsumer paper. Rechargeable batteries must not contain any heavy metals or other materials that are acutely lethal. These batteries must meet specific electrical output values in order to compete on the market with disposable ones.



Canon, Xerox and Sharp all manufacture copiers, fax machines and printers that meet these criteria. Rechargeable batteries that meet EcoLogo standards are manufactured by Pure Energy and Rayovac.

**Paints and Surface Coatings:** The content of VOCs in paints, sealants and caulking compounds is the primary criterion for the classification of these products as being “greener” than the competitors. The “low VOC content” products listed in the *EcoBuyer Catalogue* are all manufactured without formaldehyde, halogenated or aromatic solvents or heavy metals. Paints and stains must not contain more than 200g of VOCs per liter, and varnishes must not contain in excess of 300g/L.

Beaver Lumber, Benjamin Moore, Home Hardware, Sico and Sears Canada are among the companies that carry and manufacture these products.

**Paper Products and Printing Services:** The paper recycling industry has made the most visible gains in terms of environmental awareness of the possibilities for the recycling of paper products and the vast market that exists for these products. There is a growing number of recycled paper products on the market, both for the residential and industrial/institutional/professional consumer. However, there are caveats that must be kept in mind when purchasing recycled paper products: the content of recycled and postconsumer fiber must be examined to ensure that the product is truly environmentally friendly. The products in the *EcoBuyer Catalogue* (a catalogue of environmentally-preferable products certified under the EnvironmentalChoice Program, put out by TerraChoice Environmental Services Inc.) all contain a minimum recycled/postconsumer fiber content, determined by TerraChoice Environmental services. These products are:

- envelopes, business forms and other converted paper products;
- fine paper from recycled paper;
- newsprint and newsprint flyers;
- sanitary paper products.

Fine paper and envelopes, business forms and converted paper products must contain a minimum of 50 percent recycled fiber, and at least 10 percent postconsumer fiber. Any ink used must not contain more than 100 PPM of heavy metals and adhesives must not be formulated with VOCs in excess of 5 percent.

Newsprint and flyers must contain over 40 percent by weight recycled paper, and a minimum of 25 percent must be old newspaper. Flyers published on newsprint must contain 100 percent recycled fiber. Sanitary products must meet criteria relating to the effluent produced at the mill, and they must utilize only pulp from forests that are managed according to a corporate code of sustainability. Printing services must not use solvents, inks or washes that contain high amounts of VOCs. Royal, Cascades, Domtar, Xerox and Kimberly-Clark are companies that manufacture products that conform to these standards.

**Plastic Products and Plastic Film:** The recycling of plastics greatly reduces the burden on landfill sites, which must accommodate the tremendous volume of material produced, used and discarded each day. Products currently available that fit the EcoLogo criteria for recycled content are:

- food packaging film;
- plastic petri dishes;
- recycled garbage bags/shopping bags;
- recycled plastic bag closures; and
- recycled plastic sheeting.

These products must contain a minimum of 20 percent recycled plastic, and in the case of pouch packaging systems, such as those used for milk, the recycled content must be at least 50 percent. Dupont, Transco and West-Lock all produce plastic products containing recycled fiber.

**Systems and Technologies:** The advances and changes made in the systems and technologies used to produce goods and services have in many cases resulted in a reduction in waste production and/or energy consumption. These advances have resulted in the use of technologies that could be disseminated to other industries to increase their beneficial impact. The systems and technologies recognized by the Environmental Choice Program are:

- alternative source electricity generation;
- clothing hanger retrieval and recycling;
- fabric-cleaning services;

- microwave-assisted extraction process;
- office facilities;
- outdoor community events;
- packaging management systems;
- photo-processing wastewater treatment systems; and
- wastewater treatment systems.

All of these technologies result in a reduced environmental impact compared with the technologies that they replaced. Alternative energy sources, such as small-scale hydro, solar, methane gas recovered from landfills and wind turbines, all feed power into the existing grids, displacing power generated by less “green” means, such as coal or nuclear power. Recycling and retrieval reduces the burden on landfills; office waste reduction and recycling programs further contribute to this goal. Community events planned to include recycling of wastes generated and the use of public transit systems can reduce fuel consumption. Treatment of wastewater before discharging into watercourses can greatly reduce the coliform content and prevent algae blooms.

Ontario Hydro, Environment Canada and businesses contribute to the dissemination of these technologies by proving their effectiveness in real-world contexts.

Lodging Facilities: The EcoLogo program also evaluates hotels on the basis of the following criteria in order to gauge the degree to which they are committed to improving their environmental performance:

- energy savings,
- water conservation,
- waste reduction, and
- management of hazardous substances.

These criteria are all based on the performance of the industry as a whole. At present there are no hard targets for the amount of recycling of water used.

### **Links to Institutional Buyers**

An important area of focus of the Environmental Choice Program, in addition to consumers, is institutional buyers. Each year, the *EcoBuyer Catalogue* is produced, listing all EcoLogo products and services available. The catalogue is distributed to over 10,000 procurement officers in Canada and the United States. This link underlines the important relationship between environmental labeling and government and large institutional procurement. Environmental Choice addresses the interests of procurement officers in this manner.

## Mexico

In the formulation of Mexico's national environmental strategy, efforts continue to launch an environmental labeling scheme. As in many other countries, Mexican environmental regulations have been designed to mitigate various environmental problems, including controlling industrial pollution of air, water and soil, as well as controlling hazardous waste and noise. This has resulted in there being a considerable amount of expertise in wastewater and air pollution, but a lack of expertise in the areas necessary for establishing and maintaining an eco-labeling program.

The mechanisms already in place for labeling in Mexico were reviewed in 1997 and a number of changes made. Regulatory and legal changes have led to the development and enforcement of strict standards and labeling requirements for certain imported products. There are two types of standards:

- compulsory standards (*Normas Oficiales Mexicanas*—NOM); and
- voluntary standards (*Normas Mexicanas*—NMX). (TerraChoice Environmental Services Inc. 1997)

The principal official entity responsible for establishing environmental and other labeling norms for commercial uses is Mexico's Secretariat of Commerce and Industrial Development (*Secretaría de Comercio y Fomento Industrial*—Secofi). This agency works with the Department for General Product Norms (*Dirección General de Normas*—DGN), which publishes and enforces norms and criteria set out in labels. Other entities such as the Ministry of Health (*Secretaría de Salubridad y Asistencia*—SSA) and the National Institute of Ecology (*Instituto Nacional de Ecología*—INE) publish norms related to their fields but not for labeling.

Altogether, Secofi is responsible for establishing approximately 6,000 norms: norms and standards range from specifications established for general product categories, while individual technical standards and other standards are established for individual products. An important reference for technical standards is NOM-050-SCFI-1994, which serves as a guide for all products. It specifies the rules to follow in the labeling of all products, and explains the steps to follow in labeling for all Mexican-made products and imported products that are for general consumption within Mexico. Moreover, the norm applies only to finished products that are destined for the final consumer and does not apply to semiprocessed products or raw materials.

The other principal labeling norm is NOM-051-SCFI-1994, which sets out broad guidelines encompassing prepackaged food and beverage labels, but excludes alcoholic beverages. These norms pertain to both foods and beverages intended for domestic consumption, as well as export. They also detail what information and product characteristics must appear on the label. More specific norms are applied to different types of specific products. The requirements specified in the norm range from a listing of the product's ingredients, net content, drained weight, country of origin, lot identification, expiration date, nutritional information, to its instructions for use.

Secofi also provides a list of laboratories certified by the National System for the Accreditation of Authorized Test Laboratories (*Sistema Nacional de Acreditamiento de Laboratorios de Prueba*—Sinalp), which provides a certification service that verifies that products comply with their corresponding official norms. Approximately 150 testing and related laboratories have been certified by the Mexican government. (A full listing of certified laboratories is available from the CEC Secretariat.)

Before addressing the specific issue of environmental labeling, it is useful to provide an overview of the range of nonenvironmental information that is contained within product labels, not only in Mexico, but more generally. Two types of labels are used in Mexico: a drawing, sign or symbol (written or printed) that identifies the content, handling procedures, risks or dangers of the product, or a pictogram that does this. The other main instrument used is a symbol, which conveys through a stylized image different product characteristics, such as the risk of hazardous materials, etc.<sup>15</sup>

The type of information provided on product labels includes:

- who produced the product and the location of its production;

<sup>15</sup> Labels must be square and of minimum dimensions (100 mm x 100 mm per side), except on some containers or packaging that due to their size can only use smaller labels. Other labels have to be placed with opposed vertex in a vertical position with a diamond shape. The edges of a label have to be the same color as the symbol and placed at 5 mm from the exterior edge and parallel to it.

- the main ingredients of the formula (proprietary information is protected) if the product is a food product and contains a formula;
- special warnings or indications if the product is a medication (e.g., “keep out of reach of children” or “this product should not be ingested by persons with heart problems”);
- technical specifications, like voltage or other information, if the product is an electronic appliance;
- warnings against ingestion, contact with eyes or skin, and information on what to do if contents are ingested if the product contains toxic materials; more generally, given the importance of public health protection, manufacturers are required to disclose the basic contents of processed food products;
- recommended mixture proportions in the case of chemical substances—for example, “dilute one part of the chemical in question with three parts water”;
- storage features, such as “keep in a dry or cool place”; and
- recommendations for proper use of product, e.g., “do not use near open flame,” “apply only in well-ventilated areas.”

### **Examples of Environment-related Labels**

#### **Labeling of recycled products**

Some estimates suggest that as much as 40 percent of garbage consists of paper, accounting for almost half of total landfill space.

Despite the large size of the Mexican recycling industry, the quantity of materials recycled is small compared to the amount that is potentially recyclable. To date, the recycling of garbage (i.e., paper, glass, aluminum cans) is a practice that has been done mainly by hand by people who make their living sorting garbage from landfills and taking what can be reused or redeemed, at recollection centers, or during the collection process itself.

Paper producers use the recycled logo on their products to indicate that the product is either made out of recycled material or is recyclable.

The labels that are used to provide information regarding the content of hazardous waste are regulated by the Official NOM-003-SCT2-1994, which establishes the characteristics of labels on containers or packing for transporting hazardous waste.

The use of hazardous waste labels is mandatory for producers, transporters, ground transportation vehicles in transit and confinement facilities that are to deal with the hazardous waste.

#### **Labeling of Products for Energy Saving**

The official entity in charge of certifying the energy-saving label is the Trusteeship for Saving Electrical Energy (*Fideicomiso de Ahorro de Energía Eléctrica*—FIDE). The label is called “Sello FIDE.”

The Sello FIDE was created as a way to identify products with a high degree of energy efficiency and encourage the use of these more efficient products. It also takes into consideration the technological advancement features of the manufacturers, leading to the creation of a new purchasing culture.

For a product to obtain the Sello FIDE, the manufacturer or distributor must present to FIDE the test reports and official certificates that prove the quality, safety and energy efficiency of the product. The product must undergo a process of evaluation, during which it must prove to FIDE that its levels of energy consumption are equal or better than the ones established for its correspondent specification. The manufacturers benefit in the following way:

1. FIDE undertakes an advertising campaign at the national level in order to explain Sello FIDE benefits and invites the end user to look for and purchase products identified with the Sello FIDE label.
2. The Sello FIDE label can be used by the manufacturer for marketing purposes.
3. The manufacturer who has products with the Sello FIDE label can participate in the programs for financing and incentives that FIDE has developed to promote the manufacture, purchase and use of energy-efficient products.

Once the manufacturer has passed the certification process, the FIDE label serves as a membership, meaning that the product must be produced by companies that are part of the energy-saving programs. The company must also pay for the continual monitoring of the product to maintain the use of the FIDE label.

The Sello FIDE labeling program is intended to create public awareness of the better use of electric energy by encouraging consumers to purchase energy-saving products. (Readers can obtain a list of products that display the Sello FIDE from the CEC.) By reducing the energy consumed nationally, the fuel requirements of electricity-generating plants can be decreased. This will result in a reduction of emissions from these plants.

FIDE has identified the following products that meet reduced energy consumption requirements for its energy-saving label. They range from devices for use in industrial environments to household appliances and commercial devices:

- electric motors of three-phase induction;
- electric motors of induction single-phase;
- air compressors;
- lamps, light bulbs, ballast;
- electric appliances, such as air conditioning equipment, refrigerators and washing machines;
- equipment for agricultural irrigation and for pumping drinkable water and wastewater; and
- energy-saving equipment such as sensors, photo cells and timers.

This government entity is in charge of setting up norms in labeling and standards for all Mexican industries. There are general labeling requirements for all products in Mexico called NOM (*Normas Oficiales Mexicanas*) which require mandatory compliance. The Department for General Product Norms (DGN) issues approximately 6,000 norms. In Mexico there are also Mexican Norms (NMX—*Normas Mexicanas*) that do not require mandatory compliance. Products with recycled content or with a FIDE label, for example, fall into these noncompulsory categories.

All products should comply with the general NOM as well as all specific norms applicable to the product in question. For example, a copper electrical cable will have to comply with electrical NOMs and all other norms specifically developed for this particular product. The norms also apply to regular labeling but provide little information regarding ecological or environmental labeling of products. Secofi is not currently implementing environmental labeling standards. Instead, it is asking for a laboratory analysis of products entering the country to certify the contents on the label. This analysis must be performed by one of Secofi's authorized laboratories in Mexico.

#### **Ministry of Health (*Secretaría de Salubridad y Asistencia—SSA*)**

This government entity does not deal with any kind of legislation in environmental products. It uses Secofi legislation for labeling products with NOM-003-SSA-1993. Environmental Health, which outlines health requirements for paints, inks, varnishes, lacquers and enamels, is mainly concerned with the toxic level of chemicals, the use of warning labels and the appropriate medical treatment in case of accidental ingestion or spillage of the product.

### **United States**

Environmental labeling in the United States encompasses over 25<sup>16</sup> distinct programs, which together comprise approximately 156 product categories. There are roughly 307 products that have environmental labels under different programs. These labeling activities and coverage of diverse product categories play a substantial role in the US marketplace.

Among the most visible labeling features of these 25 programs are the following general approaches:

- federal government programs that disseminate relative performance information;
- government and private programs that establish performance or attribute standards and collect information for decision makers, although they may not necessarily be involved in point-of-purchase labeling;
- private third-party programs, which issue both neutral and positive labels;
- environmental marketing claims made by manufacturers and marketers with guidance issued by the Federal Trade Commission; and
- federal, state and local hazard-warning programs.

There are several practical issues that arise from the variety of programs.

The absence of a single federal mandate to consolidate diverse activities is reflected in the absence of a single, centralized seal-of-approval labeling program in the United States comparable with those in place in other countries, such as Germany's Blue Angel program or the Nordic Swan program. A practical result is that countries that maintain national labeling programs in general also have large, established markets for environmentally preferable products. That is, consumers are generally both aware of a prominent environmental label and reflect that awareness in a consistent demand.

By contrast, there is no widespread recognition of environmental labels among consumers in the United States, partly because of the absence of a single program that consumers recognize and trust. Accordingly, the focus of one of the visible labeling programs in the United States, Green Seal, focuses its efforts on institutional purchasing efforts as opposed to large-scale, consumer awareness and advertising campaigns.

### **Seal-of-Approval Programs**

The majority of seal-of-approval programs in the United States are third-party, positive and voluntary labeling programs. Seal-of-approval programs award the use of a logo to products that the program judges to be environmentally preferable compared with other products in the same category. The operation of such programs differs slightly, but in general they follow three steps:

- product category selection;
- development of award criteria; and
- product evaluation.

Product categories are often selected based on proposals by manufacturers, labeling program officials or environmental or consumer groups.

Once a product category is selected, the task of choosing and weighing environmental criteria begins. Criteria are usually based on multiple environmental attributes of the product, or a comprehensive or partial life-cycle assessment (LCA). Generally, the review of criteria, product categories and actual products selected is designed to be continually improved.

An important issue in labeling programs is what percentage of products within a given category are awarded an environmental label. Approaches differ widely. In Canada, TerraChoice awards approximately 20 percent of all products within a product category with labels. By contrast, in the United States, seal-of-approval schemes award a smaller percentage of total products with a label. It has been suggested that that this smaller grouping may provide an incentive for manufacturers to improve the environmental attributes of their products (US EPA December 1998).

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<sup>16</sup> ABT Associates Inc., *Inventory Report of Environmental Labeling and Procurement Programs in the United States*, Prepared for the Commission for Environmental Cooperation, 1999

### ***Energy Star Label***

The Energy Star Labeling program is one of several programs within the Energy Star umbrella of programs, including: the Energy Star New Homes program, the Energy Star Buildings program and the Energy Star Small Business program. Products and services that are certified by any of the Energy Star programs are assessed on their energy efficiency. The overall goal of the Energy Star programs is to reduce air pollution from the burning of fossil fuels by promoting the development and use of energy-efficient products. Energy Star partners (e.g., manufacturers, private sector industries, government, public and private organizations) volunteer to join one or more of the Energy Star programs and pledge to either make or use energy-efficient products (US EPA December 1998). The Environmental Protection Agency and Department of Energy establish the criteria, and then allow manufacturers and retailers to use the Energy Star logo, a single-attribute seal of approval, on products and in advertising if they show that they comply with the award criteria.

Currently, the program certifies the following categories of products:

- office equipment (fax machines, copiers, printers, computers, monitors);
- residential light fixtures;
- exit signs;
- transformers;
- residential heating and cooling equipment;
- insulation; and
- major household appliances (consumer electronics, televisions, and videocassette recorders (VCRs)) (US EPA December 1998).

### **Nongovernmental Seal-of-Approval Labeling Programs**

As noted, the United States has numerous private organizations supporting programs and market promotions for environmentally preferable products and services. Although there are differences in approaches between programs, generally they share similar approaches to obtaining product certification. For example, any member of the public may suggest product categories to be considered by the program. Based on input from different groups, the program decides, on the basis of the potential environmental impact of the product, whether it will develop a set of standards for the suggested categories. Once standards have been drafted, they are usually available for comments (from the public and/or experts). Comments are incorporated and the standards are finalized at which time manufacturers or service providers may apply for certification. If they are in compliance with the standards, applicants are awarded certification from the program and are able to use the program's logo on their products and services.

Standards are usually revised every one to three years depending on the program. At that time, manufacturers are required to get recertification, ensuring that they are in compliance with the new standards, in order to continue to use the program's logo.

It is the standard-setting process that has undergone changes for many programs. In the past, products have most often been assessed on a single environmental attribute (e.g., recycled content). However, recently more and more programs are moving toward evaluating products based on a complete or partial LCA. This involves assessing the environmental impact(s) of the product or service at every stage of production, from raw material extraction, manufacturing, transportation, distribution and disposal. Factors such as energy consumption, water usage and resource usage, are analyzed. Because LCA is very time consuming and costly, many programs conduct a partial LCA in which only a few factors may be analyzed.

Five of the major nongovernmental third-party seal-of-approval labeling programs in the United States are described below.

### ***Chlorine-Free Products Association***

The Chlorine-Free Products Association (CFPA) is a nonprofit trade association, composed of pulp and paper manufacturers in the United States, dedicated to eliminating the use of chlorine-based chemistry in pulp and paper manufacturing. In 1997, the CFPA established a certification program for the pulp and paper industry. Facilities can voluntarily choose to become certified if they show that they do not use any bleaching products in paper mills or de-inking facilities. Two certification logos are awarded. The "Totally Chlorine Free" logo is given to manufacturers of virgin fiber papers that have been produced without the use of pulp

bleached with chlorine or chlorine compounds. The second logo, the “Processed Chlorine Free” logo is for products that use chlorine-free virgin fiber, but may also include recycled content that was originally bleached but not rebleached with chlorine compounds when recycled.

***Eco-O.K.***

In 1991, the Rainforest Alliance created a labeling program called Eco-O.K. The Eco-O.K. program specifically targets agricultural products grown at the expense of tropical ecosystems, and certifies farms that grow these products in a sustainable manner. The Rainforest Alliance is an international nonprofit organization dedicated to the conservation of tropical forests. It aims to promote sustainable agricultural production in the rainforests of Latin America. The program has developed standards for bananas, coffee and oranges, and has recently developed standards for cocoa and cane sugar. Farms wishing to become certified by Eco-O.K. must show that they have sustainable operating practices. For example, they must take into account conservation standards (e.g., no deforestation on the farms, protection of natural habitats surrounding the farms), and make sure that workers and the community are treated fairly and are not exposed to hazardous chemicals. This is only a partial listing of the criteria to which they must adhere. To date, Eco-O.K. has certified 5 farms for oranges, 3 farms for coffee and close to 100 farms for bananas. Products from these farms can carry the Eco-O.K. seal of approval (US EPA December 1998).

***Ecotel***

The Hospitality Valuation Services (HVS) Ecotel labeling program certifies environmentally preferable hotels. Though it is a multiple-criteria program (i.e., it evaluates the product, in this case hotel services, on several different environmental criteria), it is unique in that it only awards the use of the label to one product category (hotels). Standards are updated yearly and are set so that only a limited number of hotels receive the award. This encourages the hospitality industry to improve its environmental performance as it tries to reach and maintain Ecotel standards. Ecotel assesses hotels on the basis of solid waste management, energy management, water conservation and preservation, employee education and community involvement, legislative compliance and native land preservation. Hotels can be evaluated in any of these categories, although most choose all five. As they meet specific criteria for each of these areas of consideration, hotels are awarded a “green globe”; there is a total of five globes, one for each area of assessment. Hotels need only obtain one globe to be Ecotel certified (US EPA December 1998).

***Green Seal***

The US environmental labeling program closest in structure to other countries’ national labeling programs is the Green Seal program. The Green Seal is issued by the independent, nonprofit organization of the same name. Established in 1990, the Green Seal program has approximately 277 products certified covering 85 product categories. The focus of the Green Seal program is on institutional purchasing, in part because of the budget constraints that make large-scale consumer advertising difficult.

In addition to its labeling program, Green Seal encourages companies and other large buyers to become members of its Environmental Partners Program, whose members work to develop environmentally sound procurement policies, and pledge to buy environmentally preferable products (US EPA December 1998). (For a more complete description of the Environmental Partners Program, please see Section III regarding Private and Nonprofit Procurement.)

For the majority of its product categories, Green Seal sets standards based on LCA. Standards are revised every three years and manufacturers who have been awarded the use of the Green Seal logo must continue to show compliance in order to continue to use the logo. Unlike many other programs, Green Seal’s standard-setting process is transparent in that draft standards are made available to the public for comments, via the Green Seal web site, and Green Seal’s responses to those comments are also publicly available. As of February 1999, product standards were to have been developed for 88 product categories (US EPA December 1998). Green Seal is currently in the process of developing standards for the lodging industry (hotels, bed and breakfasts, motels, etc.). It has partnered with the US Department of Tourism to develop standards for environmentally preferable lodging (Green Seal web site 1999).

Green Seal works closely with Canada’s Environmental Choice (TerraChoice) program: for example, Green Seal and TerraChoice were the first two programs to establish the Global Eco-labeling Network



(GEN). Green Seal has encouraged information exchange and harmonization with other programs through GEN. Green Seal participates in ISO activities related to labeling criteria (US EPA December 1998).

### ***Scientific Certification Systems***

The Scientific Certification System (SCS) has several labeling and certification programs. The SCS's NutriClean and Forest Conservation programs operate similarly to other seal-of-approval labeling programs in that they issue a logo for certain product categories for manufacturers to use, and the Environmental Claims Certification Program certifies environmental claims.

SCS's Environmental Claims Certification Program independently verifies the "accuracy of environmental claims on products." Under this program, SCS conducts detailed investigations to determine whether a manufacturer's claim can be verified. SCS certifies claims in the following areas: recycled fiber, biodegradable product, certified organic ingredients, no smog-producing ingredients (e.g., volatile organic compounds) and water efficiency (US EPA December 1998).

The NutriClean Food Safety Management Program is based on the "no detected residues"(NDR) certification for fresh produce. The NutriClean-certified NDR standard ensures that produce contains no pesticide residues above a laboratory detection limit of 0.05 parts per million. The program was launched not only to test pesticide residues in fresh produce, but also to recognize growers whose crops meet these standards. In this regard SCS also performs testing services for growers, retailers and importers. Foods grown organically that have no detected residues qualify for NutriClean's Organic Certification. The NutriClean program has certified over 400 growers domestically and internationally. It works with 15 major grocery store chains with more than 3,000 individual stores and provides services to more than 150 importers (US EPA December 1998).

The goal of the Forest Conservation Program is to identify forest management practices that most successfully sustain timber resources while maintaining the ecological viability of the forest and benefiting the surrounding community. SCS sends independent inspection teams to evaluate company or state forest operations. As of September 1997, SCS had certified 15 forestry operations. Applicants to the certification programs include managers of forests that produce logs and lumber, distributors, manufacturers, wholesalers and retailers. SCS has certified forests and chain-of-custody operations in North and South America, as well as in Sweden (US EPA December 1998).

### **Single-Attribute Programs**

Single-attribute labeling programs certify that claims made about a single-environmental attribute of a product meet a specified definition. Such programs may *define* specific terms such as "recycled" or "biodegradable" and accept applications from marketers for verification that their product meets the program's definition. If the program verifies that the product attributes meets their definitions, the program awards the use of the logo to the marketer. For example, the Scientific Certification Systems' (SCS) Single Claim Attribute Certification label is a single-attribute labeling program that verifies and defines the following claims: "recycled fiber," "biodegradable product," "certified organic inputs," "no smog-producing ingredients (VOCs)," and "water efficient" (US EPA December 1998).

An example of a government single-attribute program is the US Environmental Protection Agency's (EPA) and US Department of Energy's (DOE) "Energy Star" umbrella of programs, which evaluates different product categories and services on the basis of energy efficiency.

### ***California's Proposition 65***

The State of California's "Proposition 65" label is officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986. The purpose of the act is to enhance communities' right-to-know, protect drinking water supplies and reduce toxic releases. The act requires that the Governor of California publish a list of known carcinogens (cancer-causing agents) and chemicals that are known to cause reproductive or developmental toxicity. Manufacturers who knowingly and/or intentionally expose people to these chemicals must place a warning label on their products, unless levels of these chemicals are determined to pose no significant risk to individuals. This requirement has prompted some manufactures to reformulate their products in order to avoid having to place the warning labels on their products.

***Federal Insecticide, Fungicide and Rodenticide Program***

The EPA's Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is one of the oldest labeling programs in the United States. FIFRA establishes regulations for labeling of pesticide products and registered household cleaner products that claim to kill germs. FIFRA requires that labels on pesticide and household cleaner products, sold in the United States, follow strict restrictions regarding the wording and format of label information (e.g., ingredient information, health and safety information, manufacturer information, directions for use and product registration). The FIFRA also specifies the placement of the label on the pesticide container and the packaging used to transport it.

Warning labels on the pesticide container pertaining to the level of toxicity, flammability and volatility of the contents must be placed conspicuously and printed in a size that is readily legible to a person with normal vision. Treatment for persons exposed to the product must also be placed on the label, as well as any relevant warnings (e.g., "Keep out of reach of children.") <<http://www.frwebgate.access.gpo.gov>>.

The EPA's Consumer Labeling Initiative (CLI) is currently evaluating improvements to the FIFRA labeling requirements for pesticide and household cleaner labels.

***Ozone-depleting Substances Warning Label***

The Clean Air Act (CAA) of the United States requires that products containing ozone-depleting substances (e.g., chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and 1,1,1-trichloroethane, hydrochlorofluorocarbons (HCFCs)) be labeled as containing these substances. The label is a warning that must be placed on products that contain any of these substances. The warning must be stated as follows: "WARNING: Contains (or "Manufactured with" if applicable) [*insert name of substance(s)*], a substance which harms public health and the environment by destroying ozone in the upper atmosphere."

**Information Disclosure Programs**

Information disclosure programs provide "neutral" labels or information-disclosure labels composed of summary facts (environmental and nonenvironmental facts) about a product that can be used by decision makers when making purchasing decisions; but these labels do not contain any judgment about the environmental preferability of the product. Since the facts disclosed are not always positive selling features and may not otherwise be reported by marketers, information disclosure programs are usually mandatory.

Information disclosure labels respond to the view that consumers have the "right to know" about a product they are considering purchasing. An example of an environmental information disclosure program is the Fuel Economy Information Program run by the Environmental Protection Agency and the Department of Energy. This program requires that a label listing the mileage rating be affixed to all new cars and trucks sold. Another example is the EPA's Energy Guide program, which requires that an energy consumption per year or an energy efficiency rating be affixed to certain household appliances (US EPA December 1998).

Both governmental and nongovernmental organizations in the United States have information disclosure programs. Some examples of both organizations' programs are noted below:

***Energy Policy and Conservation Act Programs***

As part of the Energy Policy and Conservation Act (EPCA), the EPA and the DOE initiated the Energy Guide: Household Appliances Energy Efficiency Labeling program. This program requires that certain new home appliances that meet specific minimum energy efficiency requirements, be labeled with Energy Guide labels. The labels themselves provide information about the units of energy consumed per year by the product as well as the estimated yearly operating cost for the product.

Another program that was implemented under EPCA operates in a similar way. The "Fuel Economy Information Program" requires manufacturers of automobiles to include information on a label about the vehicle's miles-per-gallon for city and highway driving, the estimated annual fuel cost associated with its operation, and the fuel economy of comparably sized models (US EPA December 1998).

***Vermont Household Hazardous Product Shelf Labeling Program***

The Vermont Household Hazardous Products Shelf Labeling Program requires that retailers who stock household products containing hazardous ingredients place a warning label identifying these products on the shelf where the products are displayed. The program aims to reduce the use of toxic substances by encourag-

ing consumers, through the shelf labeling program and additional educational efforts, to buy alternative products containing nontoxic or less-toxic substances.

### ***Environmental Report Cards***

The report card label is a type of information disclosure label. This type of label uses a standardized format to categorize and quantify impacts or burdens that a product has on the environment. Among the best known information disclosure labels in the US is the FDA's nutrition label that presents standardized information on processed foods. Providing standardized information allows consumers to make comparisons between products and to make their own judgments about the preferability of a product based on their particular environmental concerns. In the United States, the SCS's Eco-Profile lists various environmental characteristics of products in a standardized format (US EPA December 1998).

The SCS's Eco-Profile Program is based on a complete LCA of products, thus taking into account the "upstream" and "downstream" impacts associated with any product. The collected data is then summarized in 15 environmental indicator categories. As these categories are the same for all products in a category, consumers can make informed purchasing decisions based on the label information. Further information regarding the criteria used to evaluate products and/or services, as well as information about other SCS programs may be found on-line at <<http://www.scs1.com>>. SCS also has a special certification, "Environmental State-of-the-Art," which is applied to products that perform in the top 20th percentile for all significant environmental indicators.

### ***Eco-Profile***

SCS's Eco-Profile is a neutral declaration of a product's environmental performance. The Eco-Profile is the only "report card" label in the United States. It is designed to help "managers, design engineers, purchasing agents, retail and industrial customers, and policy makers understand the environmental performance of products and materials to make better informed decisions" (SCS 1997). As part of the Eco-Profile, SCS performs a cradle-to-grave assessment that covers all relevant impacts of a product during each of its life-cycle stages; these might include: raw material extraction, material processing, manufacturing, distribution, use, and disposal. The results of the assessment are presented quantitatively in the "Certified Eco-Profile." The Eco-Profile is often thought of as the environmental equivalent of the US Food and Drug Administration's (FDA's) nutritional label. This standardized presentation of environmental information allows consumers and other decision makers to compare products' environmental performance (US EPA December 1998).

### **Environmental Recognition Awards**

Several private and public organizations give out environmental leadership awards that recognize environmental achievements within companies. For example, the EPA's Environmental Leadership Awards, though not restricted to recognizing environmentally preferable products, are presented to companies that demonstrate innovative approaches to environmental management (US EPA September 1995). Similarly, companies themselves may recognize environmentally innovative products, services or processes within their own organization.



**Section Two**  
**Environmental Certification**



## Environmental Certification

Considerable overlap exists between environmental labeling and environmental certification in terms of criteria applied, intended results and product categories. At the same time, while environmental labels are applied to specific products (e.g., dishwashers or paper products), environmental certification is increasingly being applied to underlying environmental management systems from which specific products are made.

## Environmental Management Systems

### **ISO 14000**

As Section One has shown, while the introduction of environmental labeling schemes is welcome, concern has been raised about the unclear effects of the proliferation of labels and certification schemes. These may include confusion among consumers, and potential international trade and commercial distortions arising from a myriad of label and certification schemes, each with its own environmental criteria, evaluation methods and other award criteria, make the coordination of diverse programs difficult.

One response to this proliferation is the work of the International Organisation for Standardization (ISO) in developing international guidelines and standards for environmental labeling and certification programs. Launched in 1996, the ISO 14000 series of standards is a set of voluntary standards and guidelines for environmental management systems (EMS). As part of the 14000 series, standards and guidelines for environmental labeling, environmental auditing, life-cycle assessment, environmental performance evaluation, and environmental aspects in product standards have been or continue to be developed. In early 1999, the following estimates were made regarding the total number of registrations of ISO 14000 in the three NAAEC countries:

- Canada: 62
- Mexico 19
- United States 176

(ISO web site <<http://www.iso.ch>>1999)

ISO standards and guidelines 14020 – 14025 provide for environmental labeling as follows:

- ISO 14020 are the goals and principles of all environmental labeling;
- ISO 14021 are the standards/guidelines for *terms and definitions* for self-declaration environmental labels (Type II labels);
- ISO 14022 are the standards/guidelines for *symbols* used for self-declaration environmental labels (Type II labels);
- ISO 14023 are the standards/guidelines for *testing and verification* for self-declaration environmental labels (Type II labels);
- ISO 14024 are the standards/guidelines for *Type I* environmental labels (those that are multicriteria, third-party-certified labels);
- ISO 14025 are the standards/guidelines for *Type III* environmental labels (those that are information disclosure/report card labels).

(ISO/TC web site <<http://www.iso.ch>> 1999)

The ISO 14000 standards and guidelines aim to standardize methodologies and thereby lead to harmonization and mutual recognition of programs among countries. These voluntary environmental management standards are intended to promote better management of environmental resources, as well as provide a comprehensive series of standards that may be applied internationally. Implementing a series of normalized standards across national boundaries promises to facilitate trade and improve environmental performance worldwide (ISO/TC web site 1999).

## Shade Coffee

The Shade Coffee project undertaken by the CEC focused on the potential consumer response to the introduction of Mexican Shade-grown coffee into the North American market. The project falls within the same series of “win-win” projects as this report, and the Sustainable Tourism project at the Commission. These projects examine the possibilities of using market mechanisms to promote and fund environmental conservation efforts.

The environmental benefits of shade coffee production over more conventional full sun techniques are:

- Maintenance of forest cover resulting in reduced erosion of mountain sides and watershed conservation.
- Trees sequester carbon and produce oxygen.
- Trees provide a habitat for bird species (both residential and migratory), and coffee plots shelter numerous species of mammals, reptiles and flora.
- Shade coffee areas serve to conserve biological diversity.

(CEC 1999)

On a social and economic level, shade coffee production is feasible for small landholders and their families, who could not afford the high volume of chemical inputs and hybrid seeds necessary for full-sun coffee production. By maintaining the forest cover, these small producers may also harvest other forest products, such as medicinal plants, fruits and firewood to supplement their incomes and provide for their survival needs.

According to market research done by Sustainable Harvest, there is no consumer demand, at present, for certified shade-grown coffee, and the benefits of certification are unknown to the majority of consumers. The demand for certification is far more likely to originate with importers and roasters (CEC 1999). Even so, until producers begin to market products with competing claims, the demand for a certification mechanism will remain weak in North America.

The same cannot be said in Europe, where consumers are much more aware of issues surrounding the certification of company claims from their experience with the production of organic foods. The organic food industry in Europe is much larger and more mainstream than in North America. This has led to the need to certify that products bearing the term “Organic,” are produced using truly organic techniques (CEC 1999).

The term “shade grown” is open to interpretation, as the degree of shade, and hence the amount of forest cover maintained, can be flexible. Producers of shade coffee will most likely seek some form of standardized criteria for certification of what constitutes true shade-grown coffee, as they will be the ones who will benefit directly from being able to charge a price premium for the certified product (CEC 1999). Certification has other benefits as well: by becoming certified, producers may be able to gain financial assistance from funding agencies and NGOs (e.g., Forest Stewardship Council).

Certification of shade coffee will require some form of chain-of-custody monitoring. This may be accomplished in one of two different ways:

- costs of certification are borne by the producers; or
- costs of certification are borne by the roasters.

In the case of Mexican shade coffee producers, the second approach is favored as they tend not to have the capital necessary to pay for an audit of their product. Although the costs of certification can readily be recouped through price premiums, the initial capital outlay is beyond the means of most small producers (CEC 1999).

Among roasters there is often a reluctance to pay any type of license fee for the use of a certification label. In much of North America, the degree of consumer awareness of what such labels mean is low, reducing or negating consumers’ desire to pay a premium for the shade product. This means that the roasters must promote the product themselves, a costly undertaking, in addition to having to pay the certification fee. This situation explains the lack of participation of most large- and medium-scale roasters in shade coffee certification efforts in North America (CEC 1999).



## Canada

An important focus of Canada's environmental certification initiatives is the forestry sector. Certification in this sector is being driven by:

- the desire for market acceptance in general;
- the need to assure customers that forests have good management practices;
- the need to assure the Canadian public that forests are being managed properly. This is necessary for companies to maintain their "social license to operate," as most forest lands are publicly owned in Canada; and,
- the desire for greater corporate efficiency. Companies have seen efficiency gains from ISO 9000 (a voluntary quality control standard) and expect similar gains from ISO 14000.

### ***Certification of Management Standards in the Forestry Industry***

A significant number of companies in the forestry industry are moving toward implementing management standards that may eventually be certified. A recent survey by the Canadian Pulp and Paper Association (CPPA) found that well over 117 million hectares of forest are under management standards, while approximately one quarter of forestry companies in Canada, representing about 60 percent of the forest land product, are implementing management standards (CPPA).

Canada is the first country to adopt a national standard for sustainable forestry management (SFM) (CPPA web site <<http://www.open.doors.cppa.ca>> 1999). The standards adopted comply with the certification criteria for ISO 14000. In light of this, Canada is now working with 20 other countries to help them in the development of SFM strategies for their forestry industries. A small number of them are now in the process of developing a SFM system that can be certified by the Canadian Standards Association (CSA), while several companies have sought certification from the Forest Stewardship Council (FSC), a European-based certification organization. The newly created CSA SFM System's standards were approved by the Canadian Council of Forest Ministers (CCFM) in 1995. The Council has added several additional requirements to the ISO 14000 platform. These are public participation; meeting CCFM Sustainable Forest Management Criteria, which are defined through 21 supporting critical elements; and a third-Party audit of on-the-ground performance. Indicators must be developed for each of the 21 critical elements, in addition to the complementary set of performance indicators that must be developed with public input.

### **EPDS Program—Pulp and Paper Mills**

In response to market demands for more life-cycle information about the environmental attributes of individual grades/brands of pulp and paper, the Canadian Pulp and Paper Association, in cooperation with TerraChoice Environmental Services Inc., developed the Environmental Profile Program and its reporting mechanism—the Environmental Profile Data Sheet (EPDS). This was accomplished through a multistakeholder consultation process.

The program provides commercial buyers and sellers of pulp and paper with credible environmental information so that they can make better informed purchasing and production decisions.

The program's communication mechanism, the EPDS, is a standardized reporting form for all pulp and paper products. It consists of a list of measurement data, environmental data and explanatory comments related to a list of environmental parameters/attributes. It makes no explicit comparative claims. Specific environmental attributes covered by the EPDS include:

- corporate environmental management practices;
- forestry attributes of raw fiber sources;
- product- or mill-specific resource attributes and profiles (energy use, fiber use, water use); and
- product- or mill-specific process attributes (air emissions, liquid effluence, solid waste).

Information on the EPDS must be verified by way of an on-site audit by TerraChoice Environmental Services Inc. Once issued, the EPDS is valid for a period of 12 months.

The program has been operating since 1997. To date, six pulp mills have completed the process of verification. Those going after verification are companies that want to demonstrate leadership and are committed to strong environmental performance. Several are also using it as an internal management tool for

bench-marking. It is a customer-driven program, with most of the demand coming from the German market and a growing interest being shown by the United States, especially from publishers.

***Hotel Association of Canada Green Leaf Eco-Rating Program***

The Hotel Association of Canada undertook the creation of the Green Leaf Eco-Rating Program and contracted TerraChoice Environmental Services Inc., to develop and operate the program. The program involves a graduated rating system designed to recognize hotels, motels and resorts committed to improving their environmental performance. The program recognizes a hotel's achievements through the award of one to five Green Leafs.

- 1 Green Leaf: Must have identified and initiated some measures to improve environmental performance such as energy-use reduction strategies, water conservation steps, etc. A key component should be commitment to a set of guiding environmental principles.
- 2 Green Leafs: Indicate that facility officials have moved beyond an awareness of and commitment to sound environmental practices, and have demonstrated good progress in reducing environmental impacts of facility operations.
- 3 Green Leafs: Indicate excellent progress in achieving environmental performance improvement results through current best practices in all areas of facility operations and management.
- 4 Green Leafs: Indicate industry leadership in terms of environmental practices, along with management commitment to continual improvement and industry leadership.
- 5 Green Leafs: Are reserved for facilities that serve as world leaders in environmental performance and are continually introducing policies and improved practices that can be adopted and implemented by others.

Environmental Choice is also considering the development of an eco-rated car rental program.

## United States

### *Forestry Practices Certification*

#### **SmartWood**

The aim of the SmartWood Program, initiated in 1989, is to encourage commercial forestry companies to reduce the negative impacts of their harvesting operations, by awarding compliant companies with its seal of approval. The program's managers target operations in tropical, temperate and boreal forests and apply highly specific and technical standards to the evaluation process of forestry operations. To date the SmartWood Program has certified 58 different forestry companies (1 in Canada, 5 in Mexico and 52 in the United States) and 101 product manufacturers who use certified wood (10 in Canada, 1 in Mexico and 90 in the United States) (SmartWood web site 1999).

The general aim of these criteria is to ensure that forestry operators:

- develop a formal plan to ensure good long-term forest management;
- minimize the damage they do to remaining forest during harvesting;
- protect local biodiversity and watersheds;
- prevent overcutting of popular timber species;
- develop positive relationships with local communities and workers; and
- plant trees on degraded or cleared land (with an emphasis on native species and ecosystem restoration).

(SmartWood web site <<http://www.SmartWood.org>> 1999)

The program also targets downstream distributors of wood products to prove that all wood and wood products (furniture, etc.) sold under the SmartWood logo do actually come from certified sources. To keep the use of the SmartWood seal, both forestry companies and product distributors must prove on an annual basis that they continue to meet the relevant standards (SmartWood web site 1999).

#### **Forest Stewardship Council (FSC)**

The Forest Stewardship Council (FSC) is a nonprofit NGO that has been in existence for nine years. It supports sustainable management of the global forest resources by evaluating and accrediting certifiers, encouraging the development of national and regional forest management standards, assessing forest management practices, and by promoting the benefits of third-party verification as a means to protect and conserve the global forests.

The FSC promotes the use of "chain-of-custody" certification, which ensures that all aspects of a certified forest product's production, use and disposal are carried out in a sustainable manner, with a minimum level of negative impacts. This type of certification can contribute to the realization of a price premium for products and better market leverage. Indirectly the certified entities may also realize benefits in the form of increased customer satisfaction and an improved public image. Companies must pay an initial audit fee and annual licensing fees (FSC web site 1999).

Forest assessments are not as broad reaching, focusing instead on the sustainable management of forest resources and the use of low-impact harvesting techniques.

As of 1999, 52 forest management certificates have been issued by FSC-accredited certifiers in the United States, totaling 1.84 million hectares of forest. Globally, over 14.8 million hectares of forest have been certified in countries such as Canada, Mexico, Italy and the United Kingdom. In this same year, 178 companies have been certified for chain-of-custody labels in the United States (FSC web site 1999).

The FSC also allows for the certification of nontimber forest products (NTFPs) such as fibers, resins, fruits, nuts and ornamental plants. The methods employed in the certification of these products are similar to those in use for wood products, the sustainability of the harvest and its methods, and the chain-of-custody issues of the products' exploitation.

Lastly, the FSC allows for group certification of small holdings. By combining, on paper, the holdings of several small landowners under one manager, the costs of certification may be shared. The individuals involved must sign contracts attesting that they will employ management and harvest techniques that conform to the certification standards.

The FSC is now looking to begin a wider marketing, communications and promotion campaign, which would focus on certification and educating businesses about the potential benefits of being certified.



**Section Three**  
**Green Procurement**



## Green Procurement

The procurement of environmentally preferable products has been steadily increasing in recent years. Often organizations begin considering environmental attributes of products in their procurement process because they are following a specific environmental procurement mandate or regulation (in the case of government). For private businesses, incorporating environmental attributes either benefits the organization directly (e.g., reduced costs over the life of purchased goods) or indirectly (e.g., goodwill among stockholders or customers), or more often results in a long-term cost savings. Nonprofit organizations are often inclined to procure environmentally preferable products when their mission includes stewardship of environmental quality. Additionally, some retail businesses include environmentally preferable products among the selection of goods and services that they offer to their customers.

There are still some major barriers, however, that stand in the way of environmentally preferable procurement becoming more widely used. Research has shown that it is extremely challenging to *voluntarily* increase agencies' consideration of environmental attributes of products in purchasing decisions. More often awareness for environmental considerations grows out of a requirement. Those agencies that have succeeded in integrating environmental considerations into their purchasing decisions and practices are often those that have had a "champion" in their organization who has initiated and developed an environmentally preferable purchasing (EPP) plan as part of their agency's mission. However, in recent years there has been an increase in government agencies that have implemented EPP programs and this trend seems to be growing as more people are becoming aware of the environmental impacts of the products and services they use.

A growing segment of that market is engaged in environmentally preferable purchasing, a practice that is defined as the inclusion of environmental attributes in the purchasing decisions of organizations that procure large volumes of products and services. In addition to procurement policies of federal, state/provincial and municipal sectors, the private sector represents, by virtue of capital turnover, a major source of purchasing power, including EPP practices. However, procurement programs may define "environmentally preferable" differently depending on the specific attribute that they consider important to their purchasing decision (e.g., recycled content, energy efficiency, water consumption or air pollution control).

Organizations include environmental attributes in the procurement process through one method or a combination of methods. These may include undertaking in-house research to establish specific environmental attributes and then aligning these intended attributes with public tenders, bid submissions or price preferences in the procurement process. Another route is for procurement policies to rely on third-party environmental labeling programs to provide information on the product's environmental attributes or to specify whether the product is environmentally preferable. Finally, the organization can rely on manufacturers' environmental claims.

Organizations use environmental attributes of products in their procurement decisions for several reasons. Government agencies typically consider environmental attributes of products in their procurement process because they are following a specific environmental procurement mandate or regulation.

A common challenge to the governments of Canada, Mexico, and the United States has been the decentralization of purchasing to a larger number of managers, requiring each department to implement its own environmental purchasing policies and provide relevant tools and training to buyers. This has been addressed to some extent through various initiatives and programs and training courses being conducted for federal government purchasers.

## Canada

### *Trade and Procurement Policies*

Government procurement typically represents 10 to 15 percent of GDP. Beginning with the Global Agreement on Tariffs and Trade (GATT) Tokyo Round Agreement, trade rules have progressively applied to different aspects of government procurement. Between 1990 and 1994, an estimated US\$30 billion per annum of government procurement was covered under the GATT. Under the Uruguay Round of the World Trade Organization (WTO), the value of procurement opened up to international competition is estimated to have increased to more than US\$300 billion (WTO web site <<http://www.wto.org>> 1999).

As expectations about the new round of WTO negotiations increases, many view the inclusion of government procurement in the "Millennium Round" as a probable negotiating item. The NAFTA agreement on government procurement (NAFTA Chapter Ten) provides one example of how this issue has already been included.

Chapter Ten includes under its Exceptions (Article 1018) reference to environmentally related provisions taken from GATT Article XX.<sup>17</sup> Among the most interesting aspects of recent trends in governmental procurement is that rather than environmental issues acting as allowable exceptions, they continue to become important criteria for core procurement decisions among governments.

In the public sector, the federal government has taken the lead in promoting green procurement. The federal government spends C\$11.6 billion on products and services annually and owns and manages approximately 64,000 buildings throughout the country, making it the largest single buyer and property manager in Canada (Price Waterhouse 1996).<sup>18</sup>

Several federal initiatives have demonstrated new and useful approaches to green procurement. Various initiatives under the Greening of Government rubric have promoted not just education about green procurement but practical implementation of green procurement as well. This includes pilot projects in departments such as Environment Canada (waste-free floors), Natural Resources Canada (building retrofits) and the Department of Public Works and Government Services (Green Citizenship program and Greening of the National Master Specifications). The Federal Buildings Initiative, led by Natural Resources Canada (NRCan), has been successful in shifting building, renovation and retrofitting toward more energy-efficient building designs, materials and lighting and heating systems.

A study by the Canadian Council of Ministers of the Environment found that eight of the twelve provincial/territorial governments have developed, or are developing, a policy about environmental procurement. Most of the policies are voluntary; the few mandatory policies in place relate to specific types of products. A few provinces (Alberta, Ontario) have mandatory requirements for the use of EcoLogo products if they are available, while most of the other provincial/territorial governments have no formal promotion of EcoLogo products but may buy some. Three of the governments employ a price preference (Alberta, Quebec, Nova Scotia) for green products.

In addition, green procurement programs have been given momentum by the requirement that all federal government departments develop Sustainable Development Strategies. Most departments are going through the process of creating an environmental management system, and many have developed a corresponding green procurement policy. The Department of Public Works and Government Services, which accounts for close to half of the federal procurement spending, has taken a lead in this area. It has actively responded to the challenge of green procurement with a number of initiatives, some of which are outlined in its Sustainable Development Strategy.

At the municipal level, many towns and cities have made efforts to work together with other sectors (e.g., universities, schools and hospitals) to promote the purchase of green products, particularly those products that contain recycled product. Governments Incorporating Procurement Policies to Eliminate Refuse (GIPPER) was created in 1989, spearheaded by the City of Toronto, to coordinate efforts by various levels of government to address procurement's contribution to the waste problem. Its members and many other municipalities have a policy promoting green procurement in place.

<sup>17</sup> Article 1018 includes reference to exceptions "(b) necessary to protect human, animal or plant life or health."

<sup>18</sup> NRTEE [National Round Table on the Environment and the Economy], Canadian Opportunities for Meeting Foreign Demand for Environmentally Preferable Products and Services through Federal Procurement, 34.



### ***Changing Practices within the Federal Government***

In 1995, the Canadian government amended the Auditor General Act to require all government departments to develop a Sustainable Development Strategy. To assist them the government produced *A Guide to Green Government*, outlining how departments might plan and integrate sustainable development into their department. The guide included guidelines on best practices in areas such as waste management, water usage and procurement. As a result, green procurement has been specifically addressed as an issue in the Sustainable Development Strategies of a number of departments, and most are in the process of developing, or have already developed, a green procurement policy.

In addition, a number of programs and initiatives have been developed by various departments, either individually or in partnership with other departments or industry associations, to promote better purchasing decisions. Various training workshops have been sponsored by the Green Procurement Institute (now rolled into the Materials Management Institute) and held across the country, primarily aimed at federal purchasers. These courses will continue to be offered as part of the on-going training program for professional purchasers. Many of the programs focused specifically on procurement have been led by Public Works and Government Services Canada (PWGSC).

The following outline some of the programs and initiatives being undertaken at this time:

#### **“Green Citizenship” Program, Public Works and Government Services Canada**

PWGSC has developed and implemented a number of programs to promote better environmental practices. The Green Citizenship program was developed to motivate employees to adopt green practices in the workplace. A component of it has been the development of office procedures to eliminate paper and the retrofitting of six offices with environmentally responsible materials. They have also established display rooms in public buildings across Canada to demonstrate environmental alternatives.

#### **Green Procurement Database**

An Internet-based database of green products and services of all types is being developed by PWGSC, which is putting up the initial seed money, but the database will then be owned and run by a private company. The planned criterion is that a product must have an environmental characteristic of some kind or the company must have an environmental management system in place. Contact information is not available yet.

#### **Greening of Standing Offers**

The PWGSC currently has 30 green products on standing offer, some of which are certified by the EcoLogo. Standing offers are contracts that are awarded to one or more companies in which work can be awarded on a call-up basis at predetermined rates, over a predetermined time period without having to go through the full contracting procedure.

#### **Federal Buildings Initiative**

The Federal Buildings Initiative (FBI), managed by Natural Resources Canada, is bringing about increased energy efficiency in federal facilities by establishing three-way partnerships between utilities, qualified energy management firms and federal organizations. The program enables energy efficiency upgrades to be financed through resulting energy savings. The work undertaken has included extensive building retrofits, the use of cogeneration, and the implementation of small cost-effective measures such as the installation of time-controlled thermostats and high efficiency lighting equipment.

#### **Promoting Green Purchasing in the Canadian Private Sector**

The federal government, led by Natural Resources Canada (NRCan), has been active in promoting better environmental practices and in disseminating information to industry on making better environmental choices. Most of the programs have been driven by Canada’s commitment to the Kyoto Protocol, public concerns about health (especially in regard to indoor air quality), and recognition that the construction and demolition sector contributes significantly to landfill waste.

#### **Construction, Renovation and Green Building Design**

The above-mentioned drivers converge in the building-design and the construction/renovation sectors. Canada has developed a strong knowledge and experience base in the field of green building design and management. As shown in the following section, a number of organizations and government departments have

initiated programs to promote greater energy efficiency, better environmental design and the use of environmentally responsible construction materials. Training has been provided across Canada by PWGSC in partnership with the Canadian Construction Association to promote green construction and demolition.

### **Greening of the National Master Specifications**

The Real Property Services (RPS) Branch of PWGSC is in the process of incorporating environmentally responsible choices into the National Master Specifications (NMS), a construction document designed to help those in the industry who are involved in the specification writing process. The new NMS will encourage the use of reusable, recyclable and recoverable materials. It has to date reviewed over 150 of its 650 NMS sections and plans to have reviewed and published all 650 sections with environmentally responsible choices by the year 2001.

Based on the demands of the PWGSC Sustainable Development Strategy, the following subject areas have been identified and are currently being reviewed: ozone-depleting substances; hazardous materials; toxic materials; asbestos abatement; contaminated sites; waste management and disposal (construction site); water conservation; deconstruction; PCBs; and wastewater management.

### **Green Building Information Council**

The GBIC is a Canadian nonprofit organization whose mission is to disseminate information about energy and environmental issues in the building sector. Its objectives include:

- encouraging the continuing development of building performance labeling systems such as the Building Environmental Performance Assessment Criteria (BEPAC) and assisting in the adoption of regional and international variants;
- assisting in developing standards of training and certification for building commissioning agents and for building labeling assessors; and,
- developing and implementing an intensive and sustained campaign of technical information, training and education relating to building quality and performance, aimed at all relevant disciplines and the public.

### **The R-2000 Program**

The Canadian developed R-2000 Program certifies that a home has met specific energy-efficient and environmentally-friendly standards that exceed those of houses built to the standards of the Ontario Building Code. R-2000 Builders are licensed and must undergo training. Construction materials must be chosen from a list of healthier alternatives and incorporate many products and techniques that are less harmful to the environment.

### **C-2000 Program**

The C-2000 Program for Advanced Commercial Buildings is a small demonstration program of high-performance office buildings, developed and sponsored by the Canadian Center for Mineral and Energy Technology (CANMET) Energy Technology Centre, Natural Resources Canada. Launched in 1993, its goal is to demonstrate the feasibility of achieving a high level of energy efficiency and environmental performance through the application of modern technologies. Thirteen buildings have been selected for the program; they had to meet specific performance requirements in the following areas:

- energy efficiency;
- environmental impact of the building's construction and operations;
- health, comfort and productivity of occupants and tenants;
- longevity of building systems;
- adaptability of building designs and systems to future requirements;
- operations and maintenance issues related to building systems; and
- economic viability of the building, considered on a life-cycle basis.

### **Green Depot or Virtual Sample Room**

The Virtual Sample Room is an Internet-based database oriented around green construction products. Although initially designed for government purchasers, it is accessible to anyone. It was founded through a partnership of five federal departments and the Regional Municipality of Waterloo, all of which provided seed money. The site is organized based on the level of certification and the search allows the user to specify certification standards

such as EcoLogo and/or environmental criteria. Search returns provide contact information for companies and Internet links where they exist. Suppliers pay \$150 to be listed, and the database is open to any company.

In order to be listed on this site a product must be recognized by a specified certification program (e.g., Environmental Choice Program; Green Seal of Approval; Scientific Certification Systems); an industry sourcebook (e.g., *Environmental by Design, Professional Edition*; *The Sourcebook for Sustainable Design*); and/or listed on specified web sites (e.g., Oikos: Green Building Centre; Sustainable Building Sourcebook). For a more complete listing, visit the Sample Room web site at <<http://www.solutions.ca/greendepot>>.

### ***Meeting the Climate Change Challenge***

Meeting the challenge of climate change has been the driving issue underlying a number of programs. The following programs, sponsored by NRCan, encourage the purchase of energy efficient technologies, the design of energy efficient and environmentally responsible buildings, and improved fleet energy efficiency.

#### **Energy Innovators Plus**

This program is designed to promote the adoption of energy efficient measures in different sectors by providing funding for pilot energy-efficiency retrofit projects; creating partnerships with sector associations and developing energy efficiency benchmarks and best practices programs.

#### **Commercial Buildings Incentive Program (CBIP)**

CBIP was created to encourage increased energy efficiency in new commercial and institutional buildings. It provides financial incentives to developers if they can demonstrate that their building design will be at least 25 percent more efficient than a reference building that complies with the Model National Energy Code for Buildings.

#### **Renewable Energy Deployment Initiative (REDI)**

REDI has been designed to encourage the use of renewable energy technologies in business and government. Businesses and corporations are eligible for a contribution of 25 percent toward the purchase and installation of a qualifying system such as active solar hot water systems; active solar air heating systems; and high efficiency biomass combustion systems.

#### **Transportation: FleetSmart**

FleetSmart is available only to Canadian-owned companies with fleets, international companies with Canadian offices that operate fleets, and Canadian-based companies involved in the transportation industry. It is designed to help fleet managers improve fleet performance and reduce operating costs through increased energy efficiency. Participating fleets receive information on energy management inspection, maintenance, driving practices and the latest new technologies.

#### **FleetWise Program**

The FleetWise program provides tools and information to federal fleet managers to help them respond to the climate change issue and its commitment to sustainable development. FleetWise is managed by Natural Resources Canada (NRCan) and steered by an interdepartmental committee that includes NRCan, the Treasury Board, Environment Canada, and Public Works and Government Services. The FleetWise program aims to:

- cut costs by increasing operational efficiency in the federal fleet;
- minimize the negative environmental impacts from the operation of its vehicles; and
- meet the requirements for a phased-in acquisition of alternative fuel vehicles specified in the Alternative Fuels Act.

FleetWise members have access to the alternative fuels demonstration project, which:

- evaluates the use of alternative fuels;
- reviews alternative fuel vehicles and refueling technologies;
- develops standards for alternative fuel vehicles; and
- develops innovative contracting and financing agreements with alternative fuel suppliers.

In addition to the above programs, there have been a number of guides developed by different government departments and industry sectors.

### ***Partnerships Promoting Greener Purchasing***

#### **Governments Incorporating Procurement Policies to Eliminate Refuse (GIPPER)**

GIPPER was created in 1989 to coordinate efforts by various levels of government to address procurement's contribution to the waste problem. GIPPER members include both waste management and purchasing representatives from the federal, provincial and municipal levels of government and other concerned organizations, primarily in southwestern Ontario. All members of GIPPER have adopted the statement of principle that they will purchase environmentally preferred products when they are available and price-competitive. GIPPER is essentially an information gathering and sharing body, and it has produced a guide containing specific product guidelines, based on a review of items purchased in large quantities by the member governments. Since the amalgamation of Toronto's municipal governments, GIPPER's activity has slowed down tremendously; however, there are plans to revive it within the next year.

#### **Greening of Facilities National Capital Region (GFNCR)**

The GFNCR is a new organization similar to GIPPER. Its mission is to assist in the greening of facilities in the National Capital Region (Ottawa and surrounding area). Private-sector companies have been invited to be members along with federal and regional government departments.

#### **The Recycling Council of Alberta EnviroBusiness Expo**

The Recycling Council of Alberta has held trade shows to showcase environmental products during the past few years. In 1999 it is creating a traveling modular exhibit that will be displayed at existing trade shows (e.g., PMAC, AUMA, BOMEX) with the intent of reaching purchasers who do not normally consider environmental issues when making purchasing decisions.

Companies that wish to join the EnviroBusiness Team will have different options to promote their literature and products. Products will be included in the EnviroBusiness Guide and featured on the Internet. Costs are tiered according to the number of shows and how products are displayed. While there are no specific criteria for inclusion, products and services must provide environmental advantages and be related to waste reduction, recycling or resource conservation. Companies from around the world are eligible although they must become members of the Recycling Council of Alberta.

### ***Tracking Purchasing Patterns***

There are several challenges related to tracking. First, it has been a challenge to track whether "green procurement" policies and training workshops and programs have had an impact on purchasing behavior. Most organizations do not have tracking mechanisms that indicate if a green product has been bought in lieu of another item. Many government bodies proclaim that purchasers should buy products with an EcoLogo if available. However, there have been few studies to determine if this occurs.

Second, it is difficult to ascertain if the sale of an item or service increases due to environmental labeling or certification. Canada's Environmental Choice labeling program has been unable to prove that a product has sold better due to the fact that it has an EcoLogo label on it. The program will, however, be attempting to measure the impact of the label with a product that has newly applied the EcoLogo this year.

Green procurement has largely been driven by the public sector, although some large companies in Canada have developed green procurement policies and programs as part of their environmental management system (e.g., Nortel, Bell Canada, Quaker Oats, Suncor). Ontario Hydro has devoted substantial resources to green procurement, resulting in some innovative programs and significant financial savings in some cases.

In many cases, substantial changes have been made towards reducing the environmental impact of procurement practices on the environment through modified purchasing practices that have come about from pollution prevention programs or pushing changes up through the supply chain. It is also important to note that a number of manufacturers have made changes in their products or processes, (e.g., including more recycled content or reduced toxics) but have been reluctant to advertise the improved product, due to public perception that environmental products are not as effective.

## United States

For US businesses, incorporating environmental attributes either benefits the organization directly (e.g., reduced costs over the life of purchased goods) or indirectly (e.g., goodwill among stockholders or customers) (US EPA December 1998). Nonprofit organizations are often inclined to procure environmentally preferable products when their mission includes stewardship of environmental quality. Additionally, some retail businesses include environmentally labeled products among the selection of goods and services that they offer to their customers. The large US home and garden equipment retailer Home Depot considers environmental attributes in its product evaluation and selection, stocking environmentally preferable alternatives whenever possible (US EPA December 1998).

### **The Federal Government**

As the largest purchaser of goods and services in the United States, spending \$200 billion a year, the federal government represents enormous buying power (US EPA, OPPT web site <<http://www.epa.gov/opptintr/>> and EPA July 1997). Federal procurement encompasses all purchases made by and for the operations of federal offices and departments. Federal agencies are directed to purchase environmentally preferable goods and services by many federal policies, which are described below. “Environmentally preferable” is defined, under Executive Order 12873, as “products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product service.”

### **Federal Laws and Policies Affecting EPP**

Many federal policies and laws encourage environmentally preferable procurement. In 1993, Executive Order 12873 directed federal agencies to identify and give preference to products that have a reduced impact on the environment. The Order declared that “agencies shall comply with executive branch policies for the acquisition and use of environmentally preferable products and services and implement cost-effective procurement preference programs favoring the purchase of these products and services” (E.O. 12873, Section 102). E.O. 12873 was replaced on 14 September 1998 by Executive Order 13101, entitled “Greening the Government through Waste Prevention, Recycling, and Federal Acquisition.” E.O. 13101 reinforces the federal government's buy-recycled efforts and further promotes the use of environmentally preferable products. Other policies that address EPP procurement include the Resource Conservation and Recovery Act (RCRA), the National Energy Conservation Policy Act, the Clean Air Act and the Pollution Prevention Act of 1990. These policies were consolidated into the government's procurement rulebook, *Federal Acquisition Regulations* (FAR), in August 1997.

In an attempt to promote the use of materials recovered from solid waste, the federal government encourages the purchase of products produced with recycled content. Under the Resource Conservation and Recovery Act and E.O. 13101, the Environmental Protection Agency (EPA) must designate products that are or can be made “with the highest recovered material content level practicable” and recommend how other federal agencies can buy these products (US EPA web site). This process takes place under EPA's Comprehensive Product Guidance (CPG) Program and is discussed later on in this chapter. Once a product is placed on the program's list by the EPA, all federal procuring agencies are required to purchase it.

In the past few years, federal EPP has expanded from focusing primarily on recycled content products to address energy efficiency and ozone-depleting substances. The *Federal Acquisition Regulations* (FAR) instruct federal agencies to “consider energy-efficiency in the procurement of products and services.” Executive Order 12845 requires federal agencies to purchase energy efficient office equipment (e.g. computers, fax machines, copiers) that meets requirements specified by the EPA and Department of Energy (DOE), under the Energy Star Program. Federal agencies are also cautioned against purchasing ozone-depleting substances (ODS). Policies regulating the procurement of ozone-depleting substances include Title VI of the Clean Air Act (42 USC 7671, et seq.), E.O. 12873, and EPA regulations on the protection of stratospheric ozone (40 CFR Part 82).

A product manufacturer's record of reporting toxic chemical releases from its facility is another criteria that federal agencies are instructed to consider in their procurement process. “It is the policy of the Government to purchase supplies and services that have been produced with a minimum adverse impact on

community health and the environment. Federal agencies, to the greatest extent practicable, shall contract with companies that report in a public manner on toxic chemicals released into the environment” (FAR 23.905).

Nongovernmental programs that address environmental issues of product selection (e.g., environmental standard-setting, third-party certification, environmental labeling, environmental consulting organizations) are acknowledged in EPA’s proposed guidance, directed under E.O. 12873.

### **Procurement Decisions and the Energy Star Label**

In addition to providing information to consumers, Executive Order 12845 mandates that all federal agencies purchase Energy-Star-labeled office equipment.

As the largest single purchaser of office equipment in the United States, the federal government’s increase in purchase of Energy Star products has had important impacts on the office equipment market nationwide. There has been a marked increase in the number of manufacturers of office equipment applying for Energy Star logos and a marked increase in sales of these products. Interestingly, in recent years there has been a trend for private consumers (individuals, companies and institutions) to also purchase Energy-Star-labeled products as it has become clear that buying these types of products often means a cost savings over time.

Similarly, many government agencies have joined the Energy Star Buildings and Green Lights programs, which require that any new buildings be built in an energy efficient manner and use energy efficient lighting. A similar trend is evident in the private sector, where many companies are voluntarily installing energy efficient lighting at their facilities and realizing cost savings as a result.

### **The EPA’s Environmentally Preferable Purchasing (EPP) Program**

Mandated by Executive Order 12873, the EPA set up a program called the Environmentally Preferable Purchasing (EPP) Program. The EPP Program provides “guidance for federal agencies to facilitate purchases of goods and services that pose fewer burdens on the environment.” (EPA web site) The program has developed guidance to aid federal agencies in EPP and implemented pilot programs for specific product categories to test new EPP methods.

As part of the “Proposed Guidance” mandated by Executive Order 12873, the EPA identified seven environmental principles for federal consumers to consider when procuring goods and services (60 FAR 50722). This guidance is not regulatory but is suggested to guide federal agencies in their purchasing decisions. The principles are as follows:

- *Pollution Prevention:* Consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention that strives to eliminate or reduce, up front, potential risks to human health and the environment.
- *Multiple Attributes:* A product or service’s environmental preferability is a function of multiple environmental attributes.
- *Life-cycle Perspective:* Environmental preferability should reflect life-cycle consideration of products and services to the extent feasible.
- *Magnitude of Impact:* Environmental preferability should consider the scale (global versus local) and temporal aspects (reversibility) of the impacts.
- *Local Conditions:* Environmental preferability should be tailored to local conditions where appropriate.
- *Competition:* Environmental attributes of products or services should be an important factor or sub-factor in competition among vendors, where appropriate.
- *Product Attribute Claims:* Agencies need to examine product attribute claims carefully.

(US EPA web page, Selling Environmental Products to the Federal Government, <<http://www.epa.gov/opptintr/epp/selling.htm>>)

### **Comprehensive Procurement Guideline Program**

Part of the EPA’s program to assist federal agencies in environmental procurement rests in its Comprehensive Procurement Guideline (CPG) Program. Through the CPG Program, the EPA developed a list of products, recommended for federal agencies to purchase, with the “highest recovered material content level practica-

ble,” while taking price, performance and availability into consideration (USEPA CPG web site, <<http://www.epa.gov/cpg/>>). The list currently includes 39 products in the categories of construction, landscaping, park and recreation, transportation, vehicular, nonpaper office products and paper products.

### **Pilot Projects**

The EPA’s Environmentally Preferable Purchasing Program conducts pilot projects with specific agencies and for certain product categories in order to test new approaches to EPP and generate detailed information and case studies to share with other agencies.

For the first pilot project, the EPA and the General Services Administration (GSA) joined forces to compare cleaning products on the basis of environmental attributes. Cleaning products were chosen for this first EPP pilot project since they are widely used throughout federal buildings. The GSA and EPA developed a matrix that tracks seven environmental attributes of different cleaning products to “allow purchasers to compare cleaning products based on the environmental attributes most critical for their geographic region and intended use.” The environmental attributes listed include skin irritation, food chain exposure, air pollution potential, fragrances, dyes, packaging-reduced/recovered content, and whether or not the product package includes features to minimize exposure to the concentrated product. The matrix lists these environmental attributes for 33 cleaners and degreasers from 20 different manufacturers (EPA June 1997). The matrix is available to federal procurers through the GSA supply catalog and the “GSA Advantage” web site (<<http://www.fss.gsa.gov/>>).

The EPP Program and the Department of Defense (DOD) implemented a Parking Lot Pilot Project in 1997. DOD awarded a five-year \$1 million project to a contractor to maintain and repair access roads and parking lots at the Pentagon and other DOD facilities. The contract includes incentives to use products with positive environmental attributes. Data concerning the environmental attributes of specific products were collected and compiled into worksheets for optional use by the contractor. For each environmental attribute that the contractor incorporates in its product selection, the contractor can earn a 2 percent price differential, within a set limit. So far, under this pilot project, the contractor has procured large amounts of asphalt, concrete, glass, asphalt sealer, all containing recovered and recycled materials, as well as concrete curing compound that has a relatively low volatile organic compound content. The cost for using the environmentally preferable products, including the price preference, has been less than other DOD nonenvironmental parking lot contracts. Superior performance in comparison with traditional products has led the contractor to use some of the environmentally preferable products, first tested in this pilot project, for other projects. The EPP/DOD pilot project has promoted the use of environmentally preferable building materials beyond the original scope of the project and demonstrates that environmental improvements can be made in an economic and technically sound manner.

Recently, an EPA pilot project was set up to determine the effectiveness of using information provided by nongovernmental third-party certification organizations (e.g., environmental standard-setting organizations as well as third-party certification, environmental labeling, and environmental consulting organizations) in federal procurement programs. At the initiation of the pilot project, the EPA stated that federal agencies can use the information provided by these organizations to assist their EPP efforts and outlined a few different pilot approaches that government agencies can use to incorporate this information into the EPP process. The *Pilot Project Approach on Use of Non-Governmental Entities* also proposes that the EPA do background research on product categories and environmental labeling criteria established by environmental labeling programs domestically and internationally. The EPA has begun this process of gathering information related to environmental information dissemination methods. In December 1998, the agency published an inventory of all environmental labeling programs worldwide entitled *Environmental Labeling Issues, Policies and Practices Worldwide*.

Use of the information from third-party, nongovernmental environmental labeling programs is controversial. While it can potentially increase the number and variety of products that can be examined and recommended for procurement, some people feel that objective, measurable standards are not available and oppose the delegation of government authority to a nongovernmental certification program. Others argue that third-party certification organizations can significantly enhance federal EPP efforts and that “decisions about the majority of products can be based on clear, objective data”(EPA, EPP Symposium 1997).

### Federal Agencies' Environmentally Preferable Purchasing Methods

The General Services Administration (GSA) is one of the two major suppliers and purchasing agencies of the federal government, procuring more than US\$40 billion in goods and services from the private sector each year (US EPA September 1998). GSA tracks waste minimization, recycled content and energy efficiency for the items it procures. In addition, GSA calls attention to products with environmental attributes by printing them in green ink in their main purchasing catalog and listing the particular environmental attribute considered (US EPA July 1997). The GSA also developed the *Environmental Products Guide*, featuring products that have a reduced environmental impact. In the transportation category, GSA procures alternative fuel vehicles, re-treaded tires, and re-refined oil. Energy efficiency is promoted by GSA, the EPA and the DOE through the procurement of energy-efficient computers, such as those certified by the Energy Star Program. GSA also hopes to procure green energy sources, including solar and wind power through a partnership with the DOE.

The Defense Logistics Agency (DLA), which provides supplies and services to US military forces worldwide, is the other major federal procurer and supplier. The DLA administers over US\$900 billion worth of Department of Defense contracts and other agency contracts (DLA web page). In response to EPP requirements, the DLA has created an Environmental Products (EP) Catalog <<http://www.dscr.dla.mil>>. The catalog lists products in 17 product categories, including hundreds of potential alternatives to ozone-depleting and hazardous chemicals. As of June 1997, the Department of Defense planned to incorporate environmental attribute information (including percentage of recycled content, recyclable material, biodegradable indicator, energy efficiency rate, and VOC content) for products registered in its electronic procurement catalog, the Federal Logistics Information System (US EPA June 1997). Most federal agencies purchase from either the GSA or DLA "due to the ease of ordering from them and the usually favorable prices" (US EPA, <<http://www.epa.gov/opptintr/epa/selling.htm>>). However, federal agencies can, if they chose, procure their goods and services on the open market (US EPA December 1997).

Many other federal agencies practice environmentally preferable procurement. The US Department of Agriculture (USDA) developed an internal supplement to the Federal Acquisition Regulations for environmentally preferable products to assist purchasers in deciding which products to buy. The US Postal Service also considers environmental attributes in its procurement process and has realized a savings in cost by procuring recycled materials. In addition, federal agencies are making environmental purchasing decisions when constructing new buildings. The US Fish and Wildlife Service, Department of Defense, National Park Service, US Postal Service and EPA are just a few of the federal agencies that have incorporated environmentally preferable materials into their building designs. Furthermore, some federal agencies practice informal price preferencing for recycled-content products by only soliciting these products. However, the federal government does not mandate a formal EPP price preferencing policy (US EPA <<http://www.epa.gov/opptintr/epa/selling.htm>>).

Recently the federal purchasing process has been streamlined in an effort to reduce the time and excessive paperwork associated with procurement. As part of this effort, credit card purchasing has been introduced among federal agencies. Agencies use credit cards for small purchases instead of procuring through a federal contract. The rise in credit card usage increases the number of people who purchase products directly, since employees no longer need to go through their procurement staff or fill out bureaucratic paperwork before they make purchases within a set monetary limit. However, as the number of consumers making credit card purchases increases, there may be less ability to control what they buy. The EPP Program must therefore address a larger audience about the importance of procuring environmentally preferable products. On the other hand, credit card procurement may make it easier to track EPP procurement, by tracking how many and what type of environmentally preferable products are bought, due to the credit records generated.

As part of the recent procurement acquisition reform, there has been an emphasis on taking into account more than just product price in procurement decisions and looking for products that represent an all around "best value." Consideration of environmental attributes is included in this overall examination of a product's quality.



### **State and Local Green Procurement Initiatives**

State and local governments have a combined purchasing power of more than US\$1 trillion a year (*Governing Magazine* 1997). Many states harness this purchasing power through programs to procure products that have a reduced impact on the environment. While some states began purchasing products with lesser environmental impacts in the mid-1970s, interest in procurement of recycled products increased in the 1980s and early 1990s. One reason for this was the increase in legislative action targeting the reduction of solid waste. The procurement of recycled products reduces solid waste by creating a demand for recycled materials and temporarily diverting these materials from the waste stream (US EPA September 1996b).

States and counties usually make purchases through one of three processes: by purchasing goods directly through a central purchasing agency; by using the professional services of contractors, such as consultants or construction companies; or by procuring products on their own (US EPA September 1996a).

States gather information on the environmental attributes of products through a variety of methods. Some states conduct their own research and define their own product criteria, while others follow the federal government's lead. Some states use the environmental criteria of third-party labeling organizations to develop their own criteria, while others use a combination of all of these methods. Massachusetts, which has an extensive EPP program, incorporates the work of some third-party labeling groups to develop its criteria for making procurement decisions, but it does not require that products have a certain seal of approval to be purchased. Massachusetts does not verify the environmental attribute information supplied by the vendors, nor does it conduct independent life-cycle assessments of products.

In general, state environmentally preferable purchasing activities focus mainly on the procurement of recycled materials. According to a 1997-98 survey of state and local government purchasing practices, 23 out of 48 US states require that a portion of total state purchases consist of recycled products (NASPO 1999). Paper is the primary recycled product that is procured. For these states, the amount of recycled material procured ranges from 5 to 60 percent. Recycled oil, alternative fuel for vehicles and soybean printing ink are other environmentally preferable products that are purchased by more than half the states surveyed (NASPO 1999). Some states are beginning to also consider energy efficiency in purchasing decisions. Arkansas is one state that has an initiative to purchase Energy Star items when available.

Many EPP programs are not yet able to assess multiple environmental attributes (US EPA September 1996a). Massachusetts finds it challenging to evaluate multiple environmental criteria of individual products and services, due to the lack of available information on multiple attributes and the fact that sometimes individual attributes are at odds with one another (e.g., paper products may be available with either recycled content or without chlorine, but not both). The state, however, is trying to expand its purchasing criteria to include multiple attributes. It currently procures recycled-content and chlorine-free paper products and is hoping to consider multiple-attributes of cleaning products in the future (US EPA August 1998).

Mandated price preferencing (paying more for a product that meets certain criteria) for environmentally preferable products is one way that some states are promoting EPP procurement. New Mexico, Massachusetts, Minnesota, Maine, Washington and South Carolina all have a mandated price preference, ranging from 5 to 10 percent, for the purchase of environmentally preferable products and services.

As of 1996, many states did not have programs to track their purchases of products with environmentally preferable attributes. This may change, with the automation of the procurement process (US EPA September 1996a).

State procurement, like the federal purchasing process, has moved toward electronic ordering. At least 21 states currently have electronic purchasing systems in place (NASPO 1999). Purchasing cards, which allow individuals in state agencies to procure items on a small scale rather than going through their procurement departments, are now used in 32 states (NASPO 1999). The increase in their usage has decentralized procurement as state agencies no longer have to go through a central agency to order the products that they need. As with federal procurement, the decentralization of state procurement may pose a potential barrier to EPP procurement. With more people purchasing it may be harder to educate them about the importance of buying products that pose less of a burden on the environment. On the other hand, electronic commerce may provide states with greater access to environmental products.

Examining how the state of Massachusetts, which has a strong EPP program, has implemented environmental criteria in its procurement process highlights many trends in state procurement. A brief description of Massachusetts' EPP program follows.

### ***Massachusetts***

In 1997, Massachusetts (MA) spent roughly 11 percent of its procurement budget (US\$34 million out of the US\$300 million spent on purchasing annually) on products with environmental attributes. Spending on products with environmental attributes has increased rapidly in the past few years, rising from US\$2 million in 1992 to US\$37 million in 1997 (ABT Associates Inc. 1999). The Massachusetts' EPP program places emphases on educating vendors and consumers rather than mandating environmentally preferable procurement. Massachusetts was "one of the first states to go beyond a buy-recycled program by incorporating various other innovative environmental practices into its procurements, such as awarding points to bidders and vendors who meet specific environmental criteria" (US EPA August 1998). Recently the MA EPP program has attempted to expand its scope from considering single environmental attributes toward multiple attributes. There has also been a trend within the state toward the awarding of "mega" contracts, which include broad specifications for thousands of items. This consolidation of statewide contracts, along with the current trend toward decentralized procurement, may make it more difficult to ensure that environmental criteria are specified for individual products. Agencies are now able to solicit items through their own bids. It may be difficult in the long run to ensure that all buyers include environmental criteria in their purchasing decisions due to the larger number of individuals involved (US EPA August 1998).

### ***Local EPP Initiatives***

Counties, cities and towns are also weighing environmental attributes of products when making procurement decisions. The methods of local environmental procurement vary somewhat from the federal and state processes. On the local level, procurement of environmentally preferable products is usually promoted informally rather than through distinct local EPP procurement policies (Hayes January 1999). However, some counties and cities such as King County, Washington, the City of Cincinnati, Ohio, Boulder, Colorado, and the City of Santa Monica, California, have drafted their own policies promoting the purchase of environmentally preferable products. Like most state environmental procurement programs, these county policies focus on the single attribute of recycled content. A few localities offer price preferences, ranging from 3 to 15 percent, for environmentally preferable products meeting certain criteria. Counties seeking assistance with EPP procurement, can contact the National Association of Counties (NACO), which runs an Environmentally Preferable Purchasing Project.

Localities have realized cost savings through the purchase of environmentally preferable products and materials. Santa Monica replaced custodial products with less toxic alternatives in 15 out of 17 product categories. By doing this, the county eliminated the use of 1,455 kilograms of hazardous chemicals per year and reduced spending on custodial products by 5 percent. Montgomery County, Maryland, saved US\$2.3 million from 1992 to 1995, by purchasing energy-efficient products and services. In 1997, King County saved US\$500,000 by purchasing nonpaper recycled products. (NACO Pamphlet).

### ***Private and Nonprofit EPP Initiatives***

Many private companies and nonprofit organizations also consider the environmental attributes of the products they procure.

Private companies often find that purchasing environmentally preferable products is good for business. Companies ranging from The Bank of America to the Body Shop consider environmental attributes when purchasing goods and services for their internal use. Other retailers, such as the large home and garden equipment retailer Home Depot, are buying environmentally preferable products to sell to their customers.

Hewlett Packard and IBM both have incorporated a commitment to the procurement of environmentally preferable products into their company mission statements. Hewlett Packard asks its suppliers to follow a number of environmental steps that it has laid out:

- develop and adhere to an environmental improvement policy;
- create an environmental policy implementation plan with defined metrics;
- eliminate ozone-depleting substances (ODS) from their manufacturing processes;

- complete the “HP Supplier Environmental Performance Review Questionnaire”; and
- ensure that all parts, components, materials and products supplied to HP comply with HP’s General Specification for Environment DWG.

(Hewlett Packard web site 1999)

The focus of Hewlett Packard’s procurement efforts is on the purchase of goods and services from suppliers who employ environmentally preferable practices in manufacturing, energy efficiency, information/labeling, packaging, recycling and reuse and disposal methods (Hewlett Packard web site 1999).

At IBM the main environmental focus is on energy efficiency. IBM was involved in the development of the Energy Star Program and produces computers, monitors, printers, scanners and other peripherals that comply with the Energy Star criteria. IBM also has reuse and recycling programs in place for office materials as well as computer components. The company purchases recycled office products whenever possible and includes environmental performance as a criterion when choosing suppliers of goods and services (IBM web site 1999).

The Bank of America is extensively involved in paper recycling efforts in the United States. In 1992 the Bank of America, along with a group of other major San Francisco Bay Area firms, and the Natural Resources Defense Council, created the Recycled Paper Coalition (RPC).

The RPC is focused on bringing companies across the United States into the paper recycling efforts to conserve natural resources and reduce waste by purchasing environmentally preferable paper products (Bank of America web site 1999).

Wal\*Mart also has incorporated a strong commitment to the environment into its company mission statement. By purchasing environmentally preferable office products and merchandise from suppliers who share the same commitment, Wal\*Mart strives to reduce the impact of its operation on the environment. While Wal\*Mart does not specifically target eco-labeled products in its purchasing operations, it does attempt to purchase products produced in an environmentally friendly way.

Within the company, recycling and the use of energy-saving measures in stores (e.g., the use of skylights and photo-sensitive light dimmers and switches to ensure the least amount of electrical lighting is used) are the results of the Wal\*Mart Environmental Program (Wal\*Mart web site 1999).

The company has also built three “Environmental Demonstration Stores” in the United States. These stores make use of environmentally preferable building materials, heating/cooling systems and lighting.

The two largest auto manufacturers, Ford and General Motors (GM), are both involved in reducing the environmental impacts of their operations. Ford is in the process of modifying and updating its manufacturing plants worldwide to conform to the ISO 14001 certification criteria. This has entailed reducing water consumption, reducing the production of wastes and increasing the use of reusable and recyclable packaging for its products (Ford Motor Company web site 1999).

GM, like Hewlett Packard, has defined a mission statement to which its suppliers must conform. Every supplier must:

- develop and communicate to its employees and suppliers an environmental policy statement that reflects commitment to comply with all legal requirements and to conduct its operations and activities in ways that protect human health and the environment; and
- adopt resource conservation and pollution prevention goals to support continual improvement.

(GM web site 1999)

GM’s policies target a broad range of environmental initiatives covering an array of processes:

- product/process design;
- procurement of goods with recycled content;
- procurement of reused goods;
- recycled solid waste;
- recycled toxic/hazardous materials;
- water conservation;
- source reduction/risk reduction; and
- new technologies.

(GM web site 1999)

Suppliers to GM must conform to GM 1738 for Packaging and Identification Requirements for Production Parts for product packaging. This is aimed at ensuring that product packaging is either recycled, contains recycled content or is reusable.

In keeping with their own environmental mission statements, nonprofit organizations, such as the National Audubon Society and the Rocky Mountain Institute, take environmental attributes into consideration when purchasing products and services.

Universities are also beginning to realize that they can harness their procurement power to benefit the environment and save money at the same time. Universities implement EPP through native landscaping, ecological building design and maintenance, microscale science labs (reducing the volume of hazardous waste produced) and energy conservation. Bowdoin College in Maine was able to decrease the amount of chemicals it purchases and lower hazardous waste disposal costs by downscaling the methodologies used in its chemistry laboratories. (Eagan & Keniry 1998). Green procurement on college campuses makes economic sense as well as environmental sense. Environmentally preferable purchasing on 15 college campuses results in cost savings of more than US\$16 million a year. If all of the colleges and universities in the United States practiced environmentally preferable purchasing, the potential cost savings could be as much as US\$2.6 billion a year (Eagan & Keniry 1998).

Some private, public and nonprofit organizations use nongovernmental third-party environmental labeling organizations in their EPP efforts. “Businesses, government agencies, universities, non-profit and other organizations who join Green Seal’s Environmental Partners Program as Pledged Partners, commit to buying environmentally-preferable products and services as part of their procurement policies. These partners must annually provide Green Seal with a list of their purchases as a way to ensure compliance with the pledge. Green Seal provides all its Partners (pledged partners and those who simply subscribe to the program to receive information) with the *Choose Green Reports*, which recommends specific environmentally preferable brands of products, including eco-labeled products, and list places where these products can be purchased. The Partners program currently has over 400 members, 163 of whom are pledged members.” (US EPA December 1998).

## Conclusion

Eco-labeling of environmentally preferable products, if widely implemented, has the potential to have a significant positive impact on the environment. By encouraging the private sector to preferentially purchase products that have a certified reduced adverse effect on the environment, the demand for recycled, reused and less toxic products will be increased dramatically.

One of the major stumbling blocks to this widespread acceptance of eco-labels by the private sector is the lack of prominence of any one label. Although in Canada one label, the Environmental Choice label, does dominate the market, in the United States and Mexico there is no such program. The US experience has been that the proliferation of labels has led to confusion among consumers and companies alike as to what the labels represent. In Mexico, the current state of affairs is such that only a few labels exist, and these are mainly aimed toward energy efficiency not waste reduction. The solution is to implement a national eco-labeling program in both these countries, one that will be readily identifiable by consumers and industry alike.

The second issue to be resolved, and one that has much broader implications environmentally and economically for Canada, the United States and Mexico, deals with harmonization of the criteria used for the certification and verification of products that are to carry an eco-label. By harmonizing these criteria across the three NAFTA countries, a potentially major impediment to transborder trade will be resolved. Through harmonization the trade in, and demand for, environmentally preferable products may be greatly expanded, resulting in a far greater positive impact on the environment than is possible if each country pursues its own individual program standards.



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