

Guideline for Integration of Environmental Performance Considerations in Federal Government Procurement

Table of Contents

1. **Introduction**
 - 1.1 Introduction
 - 1.2 Scope
 - 1.3 Environmentally Preferable Procurement
 - 1.4 Value for Money and Life Cycle Cost
 - 1.4.1 Introduction
 - 1.4.2 Life Cycle Cost
2. **Planning and Identifying Requirements**
 - 2.1 Introduction
 - 2.2 Opportunity to Consider Environmental Impacts and Reduce Costs
 - 2.3 Requirement Definition
 - 2.3.1 Introduction
 - 2.3.2 Performance/Functional Specifications
 - 2.3.3 Continuous Improvement
 - 2.3.4 Environmental Labels
 - 2.3.5 Options
 - 2.3.6 Early Engagement
3. **Acquisition**
 - 3.1 Introduction
 - 3.2 Selection According to Technical Capacity
 - 3.3 Evaluation of Bids
 - 3.4 Contract Award
 - 3.5 Contract Performance Clauses
4. Contract Management
5. Use, Operation and Maintenance
6. Disposal
7. Links
8. **Appendices**
 - Appendix 1: Understanding Environmental Terminology
 - Appendix 2: Examples of Environmental Factors and Evaluation Indicators

1. Introduction

1.1 Introduction

The [Policy on Green Procurement](#) requires that environmental performance be included as a key consideration in the planning, acquisition, use, maintenance and disposal of all assets and acquired services. This guideline explains how environmental performance considerations can be integrated in all phases of the life cycle management of assets and acquired services to support value for money decisions. In particular, it explains the scope of the functions and activities where such issues must be taken into account within the framework of the federal government's legislative, regulatory and policy obligations as they relate to procurement.

1.2 Scope

This guideline will be useful to officials in a broad range of functions including program, financial, procurement, materiel management, asset management, services delivery, and oversight positions, as well as those who are responsible for managing the greening of their department's operations.

1.3 Environmentally Preferable Procurement

The Policy on Green Procurement is a key element of the Government's commitment to sustainable development. It requires departments to integrate environmental performance considerations in procurement decisions and in procurement management frameworks. It also requires departments and agencies to establish, as appropriate, green procurement targets against which performance can be tracked and reported.

Procurement is an instrument used by the federal government to obtain goods and services to support project and/or program objectives. In this context, green procurement provides an effective means of helping the government advance its sustainable development objectives and to reduce the environmental impact of its operations by choosing environmentally preferable goods and services wherever it is cost-effective to do so. Central agencies, program departments and common service organizations are mutually responsible for ensuring that decisions related to planning and requirements definition, acquisition, use, maintenance, and disposal reflect value for money based on an assessment of life cycle costs, including environmental performance considerations, within the context of their overall objectives.

The planning and requirement definition stage is where there is the greatest opportunity to consider environmental issues. It is at this stage that departments and agencies can plan the purchase of environmentally preferred goods and services as well as plan the management of how purchases are used, maintained and disposed. For example, a department can choose to purchase bio-based products even where they might be more expensive than fuel based products. They must, however, be in a position to demonstrate value for money in awarding the contract, i.e., the contract should be awarded to the bidder offering the best combination of costs, quality and performance to meet that requirement over its life cycle. The requirement for bio-based products should also be tested for need, affordability and cost-effectiveness in the context of department's mandate and overall program objectives. This is a matter of prudent financial management generally rather than specifically one of the green procurement policy.

Achieving value for money should be viewed holistically from the planning and requirement definition stage, through to the effective management of the acquisition and contractor performance, and the implementation of prescribed methods for use, maintenance and disposal.

1.4 Value for Money and Life Cycle Cost

1.4.1 Introduction

The federal government's policy is that all procurement decisions should be based on value for money, having due regard to sound stewardship and it is the responsibility of all departments within the meaning of section 2 of the [Financial Administration Act](#), unless specific acts or regulations override it, to apply it.

1.4.2 Life Cycle Cost

The consideration of the total life cycle costs of goods, construction, or services is a key part of achieving value for money as well as the ideal opportunity to take a broad range of environmental factors into consideration.

Total life cycle cost assessment involves taking a broader and longer-term view by recognizing all of the costs, as practicable, associated with meeting a requirement. Generally, life cycle costs are divided into four broad categories:

- Planning costs, including administrative and other costs;
- Acquisition costs, including administrative as well as design and production costs that are associated with the good or service in question;
- Operating and use costs, including introduction and contingency costs, and prediction of useful life; and
- Disposal costs

Life cycle costs can be considered at various stages of the procurement process – at the initial stage of identifying a need and developing a business case, when producing specifications, when awarding a contract, or when identifying disposal options.

Assessment of life cycle costs will commonly require input from a broad range of sources including program managers, project authorities, procurement authorities, operational users, environmental and disposal experts, cost accountants and financial management advisors and standards organizations. Dialogue with the supplier community can also be useful to find out what is available and to inform the market of future requirements. Care should be taken not to distort competition – this process should not give any advantage to particular suppliers.

2. Planning and Identifying Requirements

2.1 Introduction

Successful implementation of the Policy on Green Procurement will require the identification and implementation of environmental performance opportunities at both the strategic and operational levels, taking into consideration specific departmental buying patterns, sustainable development targets and other Government of Canada priorities. The potential benefits of combining or standardizing multiple requirements within a department or across government is a key consideration in achieving value for money while supporting environmental stewardship. These principles align well with the Public Works and Government Services Canada (PWGSC) government-wide commodity management activities which include reviewing, planning, organizing, and controlling of a distinct group of goods and services to provide the most appropriate total cost of ownership and disposal while achieving value for money. The opportunities presented under a commodity management approach to procurement will necessarily result in simpler implementation of the policy requirements by departments. However, departments continue to be responsible for the planning and identifying of their procurement requirements including bringing these requirements to the attention of the Commodity Management Directorate at PWGSC. In addition, departments are responsible for the maintenance, operation, use and disposal whether such assets or acquired services were purchased as a result of the PWGSC commodity management activities or other method.

2.2 Opportunity to Consider Environmental Impacts and Reduce Costs

The early state of identifying a need or setting the user's requirement and developing the business case is a key point at which consideration of environmental performance should take place.

Prior to establishing a specification, there is little in terms of policy, regulations or trade agreements that affect or limit the scope to take environmental performance considerations

into account. However, efficient and effective use of financial resources does need to be assured.

It is usually the program managers, project authorities or other internal users who identify the need. It is essential that they work closely with the contracting authority to ensure that full advantage is taken to consider environmental issues at this stage, and in the subsequent development of specifications.

This stage of the procurement process is a key opportunity to consider environmental impacts and reduce costs by:

- Rethinking – e.g. service instead of product; make or buy; new or used; combining or standardizing requirements across multiple users as a means of increasing the potential to acquire environmentally preferable goods and services that reflect value for money
- Eliminating – e.g. hazardous material content
- Reducing – e.g. demand for goods and services, energy consumption, quantities of natural resources used
- Re-using – e.g. packaging, existing equipment
- Recycling – e.g. paper, glass, metals, plastic, fluids
- Disposing – e.g. minimise quantities, divert from land fills through resale or donation
- Alternatives – e.g. finding an alternative for hazardous materials has a significant cost benefit. Hazardous materials disposal costs are high and employees also require costly regular training to legally handle it

It is also important to review past experiences related to the integration of environmental performance considerations in the planning, acquisition, use, and disposal phases in order to build on that experience and ensure continuous improvement. This applies to managing environmental impacts as well as other aspects of the management of assets and acquired services.

An important skill to develop is the ability to understand environmental attributes. Appendix 1 provides a description of regularly encountered environmental terminology.

Departments should consider developing a risk-based approach to enable prioritization of actions. This includes looking at impacts on the environment as well as the feasibility of implementation based on operational requirements. For more information refer to the [Green Procurement Decision Making Tool – Setting Green Procurement Targets](#).

The following examples are designed to demonstrate that thinking widely about possible solutions can lead to the discovery of environmentally preferable, and often more cost-effective, solutions.

Example 1: Rethinking the approach to road maintenance by recycling old road materials on site, rather than bringing in new material from elsewhere. This can enable costs to be reduced, will benefit the environment and will save time.

Example 2: Rather than purchasing new facsimile machines or printers, consider multi-function equipment that can print, facsimile, copy and scan, that are Energy Star compliant to save energy costs and that have duplex capacity to reduce paper consumption and paper costs. Further consider lease/buy options to reduce maintenance and disposal issues.

Example 3: Rather than awarding waste management contracts for packaging waste, consider working with suppliers to introduce returnable packaging for delivery of the products supplied.

2.3 Requirement Definition

2.3.1 Introduction

Departments have a great deal of scope to decide how they define their requirements. Specifying in terms of environmental outcomes sends a clear message to suppliers that departments take environmental issues seriously. In developing specifications, the total life cycle costs should be considered. Care must be taken to ensure that specifications do not discriminate against products or providers or restrict competition.

Departments are able to define their requirements or develop specifications for goods and services that are resource efficient. Overemphasis on initial capital costs may cause departments to favour, for example, a product that operates on high energy even when more energy efficient devices would result in cost savings in the long run. Similarly, neglecting future disposal or replacement costs may cause departments to select goods or services based on their acquisition cost, even if for example more durable, energy efficient or more easily disposable goods would cost less over the entire period of ownership. The best practice is to find win-win opportunities where procurement decisions are both economically viable and beneficial to the environment. Environmentally preferable goods or services are generally produced and disposed of in ways that have less impact on the environment. For example, they could contain fewer hazardous or toxic materials or use less energy or reduce waste because they contain recycled materials, use less packaging or provide packaging that contains recycled material, is recyclable or will be taken back by the supplier.

2.3.2 Performance/Functional Specifications

Departments are encouraged to specify their requirements in terms of performance or functional specifications, which include environmental aspects. Focussing on the outcome or functionality allows suppliers the opportunity to be innovative, to suggest more environmentally preferable solutions, and to find the most cost-effective ways of meeting environmental objectives. This can include specifying the primary materials used. For example, requiring that:

- Recycled or a percentage of recyclable materials be used or
- Ozone depleting substances must not be used.

Performance-based specifications to prescribe specific environmental outcomes such as energy efficiency or noise restrictions also promote creativity and innovation when the onus is on the bidder to find a solution.

It is recognized that using performance or functional specifications may not always be cost-effective given the nature or the dollar value of the goods and services (e.g., commercially available off-the-shelf goods). In such instances, it may be more practical to turn to goods and services that have been certified through an eco-labelling scheme.

Trade agreements recognize that the choice of specifications is entirely the responsibility of procuring entities. The only limit to this discretion is the obligation not to create unnecessary obstacles to trade. Provided that the principles of non-discrimination, competition and transparency are respected, the trade agreements do not impede the pursuit of environmental objectives.

2.3.3 Continuous Improvement

There may be opportunities to work co-operatively with the supplier community to reduce the government's environmental impacts including those related to the supply chain. Opportunities

could include for example, reducing packaging by looking at delivery frequency and scheduling; reducing the hazardous material content in products; where the deliverables are reports (progress, draft or final), specifying these be printed or copied double-sided on recycled paper, or sent electronically. Also, wherever possible, administrative efficiencies such as using acquisition cards should be sought as they often represent opportunities to reduce the environmental impacts of government operations.

There are also a variety of ways in which e-communication can contribute to the reduction of environmental impact. For example, transferring documents electronically and holding catalogues in electronic format will reduce the amount of paper used.

Whenever possible environmentally preferred goods, services and related methods should be clearly defined in the solicitation and contract documentation.

2.3.4 Environmental Labels

Environmental labels include certification programs or eco-labels as well as international symbols such as ENERGY STAR ®. Environmental labels can be useful when defining requirements. For example, Natural Resources Canada's Office of Energy Efficiency promotes and administers the ENERGY STAR symbol in Canada and it has developed a range of tools including the [Purchasing Tool Kit](#) to help procurement officials develop specifications that will result in the purchase of the most energy-efficient products in the marketplace.

Specifications may also be developed based on eco-label criteria where these are appropriate to define the characteristics of the subject of the requirement. The holding of the relevant label may then be accepted as evidence of compliance with the specifications. However, as with any other standard, authorities must also be prepared to accept other means of proof that the good or service offered meets the specification stipulated.

2.3.5 Options

It is possible to define one or more options with higher environmental performance in addition to a "basic" option. Based on the options defined, at the bid evaluation and contract award stage, the best option can be selected according to criteria previously decided and made clear in the solicitation documentation.

For example, a basic requirement for post-consumer waste content could be set, along with options for higher post-consumer waste requirements. According to the award criteria set out in the solicitation documentation, the options can be evaluated and the bid that represents the best value for money can be selected.

2.3.6 Early Engagement

It is critical that departments engage the procurement authority in the planning phase so that a common understanding of the requirement is developed at an early stage, this way procurement considerations are dealt with when time lines are less critical and the procurement lead time can be minimized.

It may also be beneficial to initiate early dialogue with the supplier community. Before finalizing the specifications, it can be useful to find out what is available or whether there is sufficient supplier capacity to respond. In addition it is an opportunity to inform the supplier community of current and future environmental performance requirements. This provides notice to suppliers to allow them to position themselves for the future as well as stimulate more innovative responses from your supplier community. Care must be taken to ensure that

supplier engagement activities are carried out in a manner that is open, transparent and fair to all potential suppliers.

3. Acquisition

3.1 Introduction

Decisions taken as a result of the Planning and Requirement Definition phase must be reflected in the solicitation and contract documents. A clear definition of the technical requirements including the environmental outcomes to be achieved, terms and conditions including environmental terms such as use of certified recyclers, mandatory requirements and bid evaluation criteria, as applicable, as well as the contractor selection methodology will permit the award of a contract that supports value for money propositions.

3.2 Selection According to Technical Capacity

The objective at this stage is to select the bidder most able to execute the contract. The procurement obligations under the trade agreements, the [Government Contracts Regulations](#) as well as the federal government procurement policies permit contracts to be awarded on the basis of either lowest price or most economically advantageous tender reference.

The option to award on the basis of "most economically advantageous tender" must meet certain conditions and be relevant to the subject of the contract. This can include a life cycle cost analysis to be completed as part of the selection process in order to demonstrate that the environmental benefits lead to cost efficiencies or cost savings, over the expected life cycle of the goods or acquired services.

The PWGSC Bid Evaluation Process and Contractor Selection Methods provides a list of evaluation schemes and various selection methods (from lowest technically compliant bid to highest rated within a stipulated budget) as a guide for contracting authorities. The basic principles described in the guidelines for developing bid evaluation and contractor selection methodologies apply to environmental requirements just as they apply to quality, price and performance of the goods, construction, or services. These documents are made available to **Government Users Only** due to their commercial confidential nature.

Where relevant to the subject matter of the requirement, the solicitation can request evidence of the following:

- Description of tools, work plans and technical equipment with less environmental impact;
- Environmental attributes of products, including features which result in lower environmental impact during use, maintenance, and disposal;
- Use of certification system labels (or equivalent) such as Ecologo, GreenSeal;
- Specification of measures taken to minimize, reuse or recycle packaging;
- Indication of environmental management measures;
- Past performance in fulfilling similar environmental requirements; and
- Environmental Management Systems – evidence of environmental management measures that are relevant to the execution of the contract may be required.

Where independent certification is required, contracting authorities can refer to relevant environmental management international standards such as ISO 14001 or other evidence of equivalent environmental management measures. **All factors leading to the contractor selection must be clearly defined in the solicitation documentation.**

Additional examples of environmental factors and environmental criteria that could be taken into consideration are included at Appendix 2 of this guide.

3.3 Evaluation of Bids

Where value for money is determined based on total life cycle costs, the contract should be awarded to the bidder whose proposal offers the best combination of total life cycle costs, quality and performance to meet that requirement, consistent with the published bid evaluation and contractor selection methodology.

The federal government must ensure that all aspects of the procurement, including the goods, construction, or service specification, the terms and conditions, and the bid evaluation methodology used are transparent. All requirements must be clearly defined in terms of quantifiable performance and specific contract deliverables to permit ongoing monitoring of both the contract performance and the effective implementation of decisions affecting the acquisition, use, operation, and disposal of goods or services to ensure that contractual obligations are met and that value for money is achieved.

3.4 Contract Award

To ensure that environmental criteria are met, performance-monitoring activities are to be included in the contract terms and clearly establish the Government's expectations on how performance will be rated and recorded. In addition, the terms of the contract should indicate how past performance information will be used during the contract period and/or in any future application such as in the evaluation of future contract opportunities for environmentally preferable goods or services. Once aware that performance assessments will directly affect their ability to compete for future contracts, a contractor will normally take actions necessary to improve its performance. Accordingly, the contractor should be made aware of how the department rates its performance and, as a matter of best practice, departments should ask the contractor if there are areas where the department could have improved its own performance.

3.5 Contract Performance Clauses

While the resulting contract clauses do not normally play a role in the evaluation of which bidder is awarded the contract, any bidder should, in principle, be able to meet the requirements of contract clauses. Contract performance clauses should not be disguised as technical specifications, award or selection criteria. Even though contract clauses are considered to be outside the procedure of the award of contract they still need to be set out clearly in the solicitation documentation. Bidders should be aware of all the obligations laid down in the contract and be able to reflect this in the price of their bids. Contract performance clauses can therefore be used to include environmental considerations at the time of contract execution.

Examples of contract performance clauses for construction or service contracts:

- Transport of goods and tools on site:
 - Specify that delivery of goods to the site take place in concentrated form with dilution on site;
 - Specify the use of reusable containers to transport goods to the site.
- How the service is performed:
 - Specify usage indicators to ensure that appropriate quantities of cleaning product are used.
- Disposal of used products or packaging from products:

- Specify that products or packaging are to be taken away for reuse, recycling or appropriate disposal by the contractor.
- Training of contractor staff:
 - Specify that staff must be trained in the environmental impact of their work and abide by the environmental policy(ies) of the department where the work is taking place.

Examples of contract performance clauses for the supply of goods:

- Specify goods are to be delivered in the appropriate quantity as this will be more environmentally efficient in terms of transport impact per item than having smaller quantities delivered more often; specifying a maximum number of deliveries per week or month can also be another way of achieving the same result;
- Requiring that goods be delivered outside peak traffic times to minimize the contribution of deliveries to traffic congestion;
- Requiring that the supplier take back (and recycle or reuse) any packaging that comes with the goods – this has the double advantage of centralizing packaging prior to reuse or recycling and encouraging the supplier to cut down on any unnecessary packaging.

4. Contract Management

Effective contract management ensures that the contractor fulfills its performance and delivery obligations, including the environmental benefits sought during the planning phase.

Performance monitoring activities will provide assurances that:

- The contractor does the work in the timelines allotted, abiding by the environmental performance measures called for in the contract;
- Effective performance is continuous or is adjusted as required to the most beneficial level of effort to produce desired outcomes; and
- Performance is being managed within the available funding (contractor maintains effective and responsive cost controls).

Contract amendments are an important aspect of contract management. Amendments can impact any aspect of the contract from price, delivery schedule, work requirements, or contract clauses, including environmental performance criteria or conditions. Proposed contract amendments must be closely examined to assess the overall effect on:

- Life cycle costs;
- The potential to achieve value for money and reflect sound stewardship;
- The effect on the overall contract environmental performance results; and
- Whether the proposed amendment will impact on other related contracts (i.e., change to an acquisition contract involving an asset may affect the maintenance contract).

Where a contract extension is being considered, it is important to ensure: that the extension or renewal of the contract is the most efficient and effective method of procurement for the requirement; and will result in a value for money outcome and that the contractor's performance of the contract has been satisfactory.

5. Use, Operation and Maintenance

Often this stage of the procurement process is associated with building maintenance activities and often documentation and best practices are aimed at the [real property maintenance activities](#). However, it is important to look at the use, operation and maintenance of goods and services purchased in a more encompassing way.

The use, operation and maintenance stage is often where the environmental benefits planned at the beginning of the process come to fruition. Purchase + proper use of the assets we acquire is crucial. For example, the acquisition of duplex printers is an environmentally preferable option, however the outcome is only environmentally preferable when it is supplemented with mandatory direction on its use or if the environmental benefits associated with the purchase at the outset - i.e., reduction of paper consumption - are monitored and reported.

Other examples where the actual conditions of use for the asset must be the same as the assumptions made in the life cycle analysis:

- To achieve the high fuel efficiency expected with hybrid vehicles, the vehicles should be chosen for use in situations where they perform best. Drivers also must be trained appropriately. For example:
 - Hybrid vehicles show the highest fuel savings relative to conventional vehicles when used for city driving as it maximizes the use of the electric motor
- To achieve the greatest energy savings associated with 'power down' features on computers, settings must be adjusted to a level that puts the computer in 'sleep' mode after a brief time period.

Effective use, operation and maintenance plans should for example:

- Educate the staff on the value of maintenance, and how a properly functioning asset can save money and contribute to environmental performance;
- Include schedules for periodic maintenance checks;
- Use a work order system to track work orders, maintenance performed, and costs for each piece of equipment;
- Ensure that the maintenance staff is appropriately trained and has proper Operation and Maintenance manuals;
- Ensure availability of recommended spare parts; and
- Track performance of the asset against the expected performance targets, including environmental performance indicators.

Products must also be properly maintained and used, to extend the service life of a product. When economically feasible, equipment should be repaired, refinished and reused. There are many examples where this advice could be applied:

- Upgrading, rather than replacement, of computer equipment;
- Proper maintenance of vehicles, i.e., proper tire inflation levels can improve fuel efficiency by five percent;
- Electrostatic re-painting of filing cabinets, rather than replacement with new items; and
- Use of warranties for repairs rather than replacement in furniture.

6. Disposal

Departments and agencies are responsible for ensuring that material assets are managed and disposed of in an environmentally responsible manner consistent with the principles of sustainable development. When considering disposal options, an assessment of the environmental impact of each option should be considered including opportunity for reuse through departmental transfers, donations or resale; opportunity for recycling; or conversion to waste in an environmentally sustainable manner.

From an environmental perspective, there are some important aspects of the disposal phase to consider:

- A product can only be considered recyclable where there is opportunity to access facilities for recycling or if there is opportunity for local collection for recycling. For example, in some cities, you cannot recycle foam, so foam packaging cannot be considered recyclable packaging in those jurisdictions.
- Look for opportunities for take back of products for recycling (battery take back programs, oils and paints).

The Treasury Board [Policy on Management of Materiel](#) provides direction for the management of departmental materiel assets throughout their life cycle, and, with respect to disposal, requires that Deputy Heads ensure that:

"The disposal of surplus materiel assets is concluded as effectively as possible, as soon as possible after they become surplus to the requirements of program delivery, in a manner that obtains highest net value for the Crown. The disposal of surplus material assets must be carried in compliance with the Treasury Board [Directive on Disposal of Surplus Materiel](#)."

The Directive on Disposal of Surplus Material directs departments, wherever practicable, to make surplus materiel assets available to other federal departments and agencies before disposing of them outside the federal domain. This embraces the principle of reuse and furthers the objective of green procurement; that is, the greenest option is when procurement is not initiated.

At the end of the life of the asset that has no resale or trade-in value or cannot be donated, disposal should be carried out in the most environmentally responsible manner including seeking opportunities to use waste minimization or waste diversion programs.

7. Links

- [Policy on Green Procurement](#)
- [Financial Administration Act](#)
- [Green Procurement Decision Making Tool – Setting Green Procurement Targets](#)
- [Purchasing Tool Kit](#)
- [Government Contracts Regulations](#)
- [Considerations for Office Building Operation and Maintenance](#)
- [Policy on Management of Materiel](#)
- [Directive on Disposal of Surplus Materiel](#)
- [Surplus Crown Assets Act](#)
- [Disposal of Surplus Moveable Crown Assets](#)

Appendix 1 - Understanding Environmental Terminology

This Appendix includes the environmental terminology that is regularly encountered when reviewing environmentally preferable goods and services. Some terminology has a standardized meaning and can require certification prior to being used by suppliers. Others are more generic and can be meaningless, unless a specific standard is cited to back up the claim. It is also important to note that some environmental features can be achieved by compromising others: for example, a product that shows high durability may contain more hazardous materials or volatile organic compounds (VOCs) than lower durability competitors. It is therefore important to understand the overall environmental qualities of a product, and not only individual features.

The following points should be considered when reviewing environmental claims:

- Be wary of 'generic' environmental claims that are unregulated or ill defined.
- Encourage suppliers to highlight environmental product attributes.

- Validate supplier claims by checking for certification, and asking for proof of environmental attributes, such as standards and methods used to reduce environmental impacts.

3Rs - Reduce, Reuse and Recycle

The 3Rs are a basic methodology that can be applied to almost any activity or purchase. They are hierarchical, with 'reduce' being the most important, followed by 'reuse' and 'recycle'. Recycling has no impact on consumption (of finished products), whereas the first two options do. The 3Rs are applicable to deciding if an item needs to be purchased as well as which item to choose.

- **Reduce** - Do we really need it or can we find an alternative?
- **Reuse** - Can we find a surplus item or upgrade an existing item?
- **Recycle** - Purchase products that can be recycled or contain recycled content.

For example:

Reducing the actual use of fine paper is the most effective way of saving money and resources, while re-use of old paper further slows down the rate at which new paper is consumed. At a cost of \$600 to \$1000 per tonne of fine paper, savings add up quickly. Finally, recycling used paper reduces environmental impact and can generate profits, too: a tonne of paper earns revenues from the sale of the material, as well as realizes savings by eliminating the need to haul the material to landfill. These revenues and savings are offset by the costs of collection.



[Top of Page](#)

Degradable

A degradable material is one that breaks down in such a way that the resulting materials can be easily assimilated into the environment, without having any significant negative impact on the environment. Degradability claims on package labels usually refer to biodegradability and/or photodegradability. While many materials are ultimately degradable, the conditions under which these materials are disposed of, usually through landfill, may hinder the degradation process. Generally, light must be present in order for a product to photodegrade, while biological degradation requires oxygen to be present. Neither light nor oxygen is readily available in conventional landfills. Therefore, a supplier's claim of degradability only has value if the disposal conditions are appropriate for degradation to occur. Furthermore, if a product is only partly degradable, those ingredients that are identified as degradable should comprise a significant part of the product.

Suppliers should cite specific standards when making claims of degradability. The American Society for Testing Materials (ASTM) and Organization for Economic and Cooperative Development (OECD) publish degradability standards for a range of material, including plastics and chemicals. For example, ASTM standard 6400 sets out criteria (60% degraded within 180 days) that plastics must meet to be considered compostable.

Durable

By definition, durable means useful for a long period; resisting wear, decay, etc. Durable products are environmentally preferred, in principle, because they can be reused or upgraded, they keep resources from landfill, and reduce the need for the consumption of raw materials.

However, there are no set criteria for durability. When a supplier claims that a product is more durable compared to competitors, ask for further information, such as the expected lifetime of the product, options for reuse and/or upgrade, and availability of replaceable parts that prevent disposal in the event of a breakdown. Consider the claim of durability in the context of degradability and hazardous materials. Some durable products may not ultimately degrade upon disposal or contain chemicals that slow the rate of wear and are ultimately harmful to the environment and/or human health.

Environmentally Preferable, Environmentally Safe, Environmentally Friendly, Green

In the Policy on Green Procurement, 'environmentally preferable' goods and services are defined as 'those that have a lesser or reduced impact on the environment over the life cycle of the good or service, when compared with competing goods or services serving the same purpose.'

As a product label, however, the terms environmentally 'preferred', 'safe' or 'friendly' have no standard definition. The same is true for terms such as 'environmentally responsible' or 'green'. Therefore, this claim can be meaningless, unless specific environmental standards are cited. Suppliers should be requested to provide complete information as to why they deem their product to be environmentally preferable to its competitors.

Greenhouse Gas Emissions (GhGs)

Greenhouse gases include any of the atmospheric gases that contribute to the 'greenhouse effect'. The greenhouse effect is the trapping of heat within the earth's atmosphere, by atmospheric gases, and is the cause of global warming. The greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), halogenated fluorocarbons (HCFCs), ozone (O₃), perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs). Emissions and accumulation of these gases in the atmosphere are caused by the burning of fossil fuels (oil, gas, coal, etc.) and the release of some manmade chemicals. Reduction in emissions of these gases is being targeted to prevent/reduce global warming.

Products and services that burn less fuel or consume less energy can claim that they have lower GHG emissions. The claim can be verified by looking at the product's or service's total fuel consumption, compared to its competitors. Some examples include:

- A vehicle that has better fuel efficiency burns less fuel per km driven and therefore emits less greenhouse gases than a lower efficiency vehicle.
- The less electricity an appliance uses, the less GhGs will need to be released to the atmosphere by coal-fired electricity generating stations.
- The better insulated a building is, the less heat is lost to the exterior and therefore the less fuel burned to maintain comfortable temperatures. As a result, the building will cause the emissions of less greenhouse gases than one that is poorly insulated.

Hazardous Materials

Generally speaking, products considered "hazardous" are dangerous to human health. The two most common Canadian references to hazardous materials can be found in the Workplace Hazardous Materials Information System (WHMIS) and the *Transportation of Dangerous Goods (TDG) Act*. Industrial suppliers must provide Material Safety Data Sheets (MSDS), which provide information regarding the risks of using a product and precautions to be taken to safely use, store and dispose of such products. However, only products for use in an industrial setting are regulated by WHMIS and TDG.

The *Hazardous Products Act* and the *Consumer Packaging and Labeling Act* regulate the labeling of consumer products, for use in both industrial settings and by consumer households. Consumer products that can pose a safety risk are marked as being flammable, corrosive, poisonous or explosive.

Product specifications should be checked for hazardous material content. Replacement options that contain no hazardous materials should be considered. If non-hazardous options are not feasible, compare available options to identify those with the lowest hazardous material content. Ensure that appropriate use and disposal arrangements exist, to ensure that the product can be safely used and discarded.

Web Links

- [Workplace Hazardous Materials Information System \(WHMIS\)](#)
- [Transportation of Dangerous Goods Act](#)
- [Hazardous Products Act](#)
- [Consumer Packaging and Labeling Act](#)

ISO Registered

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies. The ISO 14001 standard is being used by organizations around the world to develop Environmental Management Systems (EMS). An EMS provides a framework for managing environmental responsibilities efficiently and supports their integration into overall business operations. An organization may simply base their EMS on the standard or it may choose to become officially registered to the standard, in which case it must periodically undergo audits by an ISO 14001 "registrar". The establishment of EMSs based on this standard ensures that companies are managing the environmental impacts of their operations.

ISO 14020 to 14024 eco-labeling standards address product labeling, environmental claims made by suppliers, and the standardization of environmental terminology.


Web Links

- [International Organization for Standardization \(ISO\)](#) 
- [ISO 14000](#) 

Non-Toxic

Toxicity is defined as "the inherent potential or capacity of a material to cause adverse effects in a living organism". (State of the Environment Report, 1991). There is little value or consistency to the 'non-toxic' label, unless backed up by a certification. The certification standards cited should be reviewed to better understand the meaning of the 'non-toxic' claim.

When comparing 'non-toxic' products to conventional products, ask the supplier to specifically indicate what makes their product non-toxic. For example, non-toxic markers do not contain xylene and toluene, two substances specifically named as "hazardous" by Workplace Hazardous Material Information System (WHMIS) standards (see [WHMIS website](#)).

The *Canadian Environmental Protection Act* maintains a list of [Priority Substances](#)  that are deemed toxic to the environment.

Ozone Friendly

The ozone (O₃) layer protects the Earth against UV radiation. A class of chemicals known as halocarbons is used in packaging, foam, and as solvents, propellants and refrigerants. They are particularly harmful to the ozone layer, interacting with and destroying it. This allows harmful UV radiation to pass through to the Earth's surface.

There is no set definition of 'ozone-friendly' but it is generally intended to indicate that a product is free of chemicals, typically halocarbons, which damage the ozone layer. The most commonly cited examples, chlorofluorocarbons (CFCs), have been banned in industrialized countries since 1996. However, replacement substances, such as hydrochlorofluorocarbons (HCFCs), are still in use, have some potential to deplete the ozone layer, and should be avoided wherever possible.

A useful product label, which is controlled by the US Environmental Protection Agency (US EPA), indicates, *"Contains no CFCs or other ozone depleting substances. Federal regulations prohibit CFC propellants in aerosols"*. The EPA maintains a list of ozone depleting substances and this label allows the identification of products that do not contain these substances. The label is most frequently found on cleaning products.

Products containing non-ozone-depleting substitutes should be considered preferable over those that deplete ozone. It is important to note that replacements do exist. For example, hydrofluorocarbons (HFCs), can be used as a refrigerant, in place of HCFCs.

Web Link

- [EPA Government list of ozone depleting substances](#) 

Recycled Content: Post-commercial/Pre-consumer

Recycled content is the portion of a product, by weight or volume, which is composed of materials recovered for recycling. Packaging can also have recycled content, usually measured by weight. Products containing recycled content have a positive environmental impact because they divert waste material from landfill and can reduce energy consumption by re-processing recycled materials, rather than using virgin resources.

There are two types of recycled material:

Pre-consumer material indicates material recycled prior to use by the consumer, i.e., industrial scrap material left over from an industrial process that is not capable of being reused or reprocessed within the same plant or process (e.g. Boxboard trim). To make an appropriate "pre-consumer" recycled content claim, a supplier must be able to substantiate that the pre-consumer material would otherwise have gone into the solid waste stream.

Post-commercial materials are generated by commercial and institutional facilities, or households. They can no longer be used for their intended purpose and are separated from the waste stream for recycling. Post-use material excludes the in-plant reutilization of materials, such as re-work, re-grind, re-pulp, or scrap materials generated within the plant and capable of being reused within the process that generated it.

Recyclable

When an item is recycled, it is separated from the solid waste stream, diverted from landfill and re-processed into a new product through an established recycling program. A claim of recyclability should make clear to consumers whether it refers to the product, the package, or both.

To determine if a product is recyclable, information on recycling facilities and processes is needed. Many products may be recyclable in principle but without local processing facilities they will be directed to landfill. Equally important is the existence of a recycling system in the workplace.

CSA and ISO standards attempt to define the term 'recyclability', by requiring that a recyclable claim be made only if the material in question is currently being accepted at "reasonable" levels for recycling. An industry benchmark for the claim of recyclability is that "at least one third (1/3) of the population in the area where the product is distributed has convenient access to collection or drop-off facilities for recycling".

Resource Efficient

Resources include raw materials such as timber, minerals and metals, water and energy sources. Resource efficiency means that resources are used in the most productive and economical way possible, keeping quantities consumed and waste to a minimum. Ideally an item should be resource-efficient throughout its life –from design and manufacture through to use and disposal. When assessing resource efficiency, consider elements such as energy consumption during delivery, use and disposal, features that reduce energy, fuel or water use, capacity of product (e.g., is it larger than necessary to meet the need?), waste generation during use, and quantity of packaging.

NRCan's Office of Energy Efficiency cites the following example of energy efficient light bulbs: One 11 watt compact fluorescent bulb will replace a standard 60 watt bulb in terms of amount of light, and the compact fluorescent will last 10,000 hours – the same amount of time as 10 regular bulbs. The fluorescent bulb costs about \$20 more than the 10 standard bulbs, but there is a savings of \$37 in energy cost over the life of the fluorescent bulb (using a cost of 8 cents/kWh). Net savings associated with the fluorescent bulb is therefore \$17. This also represents a 75% reduction in energy consumption. Additional benefits are realized in the reduction of materials for manufacturing, packaging and transportation costs.

It should be noted that fluorescent bulbs contain mercury, a hazardous material. While the energy savings is valuable, a proper handling and recycling program must be in place to ensure that improper disposal does not result in environmental damage or safety issues for workers.

VOC

Volatile Organic Compounds (VOC) change rapidly from a liquid state to a gaseous state when exposed to air. VOC vapours react with oxides of nitrogen in the presence of sunlight to produce low level ozone, an air pollutant and a contributor to smog. Indoors, VOCs can adversely impact indoor air quality, a measurement of the quality of air in a particular building based on the concentration of chemicals, particulates and other elements harmful to human health. Sources of VOCs include off-gassing from furniture, carpets, printers, cleaning products, markers and paint fumes. Products that contain fewer VOCs are generally better for the environment. For example, paints that are water-based, contain no heavy metals or formaldehyde and contain less than 25 g/l of VOCs, have fewer air emissions than standard paints and are considered environmentally preferable.

Appendix 2 - Examples of Environmental Factors and Evaluation Indicators

1. Environmental Factors

Examples of environmental factors that could be taken into account in assessing value for money are provided below and are provided in terms of cost elements that departments may take into account in the evaluation of bids. These include:

- Operation costs such as energy or water consumed by the product over its life;
- Indirect costs (less energy efficient IT equipment will produce more heat causing the building's air conditioning system to work harder, and increase electricity costs);
- Administrative costs such as complying to WHMIS;
- Investing up front to save costs later, such as specifying higher levels of insulation where the extra expenditure can be recovered from lower energy costs;
- Use of refurbished parts or products where possible;
- Recyclability
 - this is thought to be key since purchasers can create markets for their own waste such as paper, toner cartridges, etc., through the transformation and sale of products containing recycled materials;
- Cost of disposal arrangements;
- Establishing minimum environmental performance standards for commodities where there is a sufficient supplier base to support competition;
- Where the supplier base is limited, include incentives for meeting extra environmental performance criteria; and
- Use of contractual terms to define environmental obligations such as packaging take-back, use of certified recyclers for e-waste.

2. Evaluation Indicators

Examples of indicators that could be examined to develop evaluation criteria:

- Environmental Certification
 - Has the product/service been certified through an independent program such as the Environmental Choice Program or Energy Star?
 - Have studies of the environmental attributes of the product been completed?
- Energy and Resource Efficiency
 - Do you purchase used, remanufactured, rebuilt or refurbished goods and/or materials?
 - Does this product make efficient use of resources and energy throughout its life cycle?
 - Does this product reduce waste?
 - Suppliers should be instructed to indicate if the product has any energy, water or fuel saving features such as Power Down Mode.
 - Are there measures to extend the useful life of the good, e.g. re-use, refill, recharge, recondition?
- Recycled Content
 - Does the product include post-consumer recycled content?
 - What type and what percentage of recycled materials?
- Hazardous Replacement
 - Does the supplier offer a non-hazardous replacement or alternative for this product?
 - Does the product require Material Safety Data Sheets (MSDS)?
- Performance Testing
 - Is it possible to test the product/service prior to purchase?
 - Does the product meet your performance specifications?
 - Is there any documented past performance? (e.g. annual reports, environmental performance reports)
- Packaging
 - Is packaging reduced to the bare minimum required to ensure that the good is delivered in perfect working condition?
 - Can the good be acquired in bulk or concentrated form?
 - Will the supplier remove the packaging from the site following installation?
 - Is the packaging reusable, contain reusable parts or recyclable?
 - Does the packaging material contain post-consumer recycled materials?
- On Site Waste Management
 - During the project will all waste be source separated on site and recycled?

- Request information and reward environmentally sound stewardship and use of certified haulers/sites.
 - Is the good or service designed to minimize waste (e.g. catering service using dishes that are made of china rather than Styrofoam)?
- Return for Disassembly and Recycling
 - Does the product include a return for recycling policy?
 - Can the product be recycled in your area?
 - Will consumables (such as toner cartridges) be accepted for recycling?
 - Is the product easily disassembled?
- Warranties
 - What is the expected useful life span of the product?
 - How long is the warranty and should you purchase an extended warranty?
- Maintenance
 - Is it designed for easy maintenance and repair?
 - Are maintenance and replacement parts readily available and reasonably priced?
 - Is it easy and cost effective to upgrade?
- Environmental Attributes of the Supplier
 - Does the supplier have a certification or registration (e.g. ISO 14001 registration)?
 - Does the supplier participate in voluntary environmental programs?
 - Has the supplier received any regulatory environmental violations within the past five years?