



Buying Green!

A Guide for Purchasing Environmentally Preferable Products

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If you have any questions or comments regarding the guide, please contact the following:

Government Purchasing Agency

30 Strawberry Marsh Road, St. John's NL A1B 4R4

Phone: (709) 729-3330

Email: Tenders@gov.nl.ca

Office of Climate Change and Energy Efficiency

P.O. Box 8700, St. John's, NL A1B 3X4

Phone: (709) 729-3215

Email: climatechange@gov.nl.ca

TABLE OF CONTENTS

Introduction	4	Appendix A: How to Put Green Into Procurement of Buildings and Construction	52
What is the Purpose of this Guide?	4	Appendix B: Green Product Factsheets	66
Who is this Guide for?	4	Appliances	66
The Buying Green Guide at a Glance: How it is organized	5	IT Equipment	69
A Quick Start Checklist	6	Copy Paper	72
1. A Green Procurement Primer	7	Interior Lighting	75
1.1 What is Green Procurement?	7	Janitorial and Cleaning Supplies	78
1.2 Why is Green Procurement Important?	10	Light Duty Vehicles	82
1.3 Busting Green Procurement Myths	12	Office Furniture	85
2. Integrating Green into Procurement Roles and Processes	14	Waste Hauling & Recycling Services	89
2.1 Who Needs to be Involved for Green Procurement to be Successful?	14	Wood for Construction	92
2.2 Getting Started: A Basic Framework for Buying Green	15	Flooring	95
2.3 Defining the Need for a Product or a Purchase	15	Architectural Paint	99
2.4 Identifying the Significant Green Impacts of a Product or Service	17	Office Supplies	102
2.5 Evaluating Options and Selecting your Product or Vendor	25	Drinking Water	106
2.6 Communicating Results and Telling the Green Procurement Story	31	Food and Catering Services	109
3. Reference Sheets and Worksheets to Support Buying Green	33	Vehicle Consumables	115
3.1 The World of Environmental Performance Labels – Reference Sheet ..	33		
3.2 Selecting the Green Issues for your Tender or RFP – Worksheet	39		
3.3 Measuring Vendor Leadership – Example Questionnaire	41		
3.4 What to Report when Buying Green – Worksheet Template	43		
3.5 Defining Green Procurement Terms – Reference Sheet	46		

Buying Green!

Green procurement is about minimizing the negative environmental and health impacts associated with what people buy on behalf of organizations —and for themselves. It's about buying products and services that are more energy efficient, less toxic, safer for workers and come with less packaging.

Buying 'greener' products and services helps minimize the environmental impact of government's activities, and in many cases it can also be more cost effective. At its core, green procurement within government organizations is about getting better total value for taxpayers' money.

With current annual spending of over \$2 billion, the Government of Newfoundland and Labrador has a huge opportunity to use its purchasing influence to stimulate demand for green products and services, and advance many of its key priorities such as waste reduction, fiscal responsibility and becoming more energy efficient. Green procurement can help government reduce its total costs by looking beyond the initial price of a product or service to also consider operating cost and costs for disposing or recycling a product. Green procurement is a key lever for any organization that wants to become more efficient, responsible and accountable.

What is the Purpose of this Guide?

The purpose of this guide is to promote a greater understanding of green procurement practices and help reduce the impact of government operations on the environment. The guide provides information on how to incorporate environmental considerations into purchasing and select products and services that represent 'best value' for government and taxpayers. It outlines how green procurement can help government achieve its strategic priorities. The guide is a practical tool that can be used throughout the procurement process — from low dollar value purchases to writing specifications to evaluating tenders and requests for proposals (RFPs).

Who is this Guide for?

This guide is for anyone who is involved in the procurement process and has a responsibility or an interest in helping government advance its environmental and other key priorities. Specifically, this guide is for staff within core government, but may also be of interest to government funded bodies (GFBs) such as municipalities, crown corporations, school boards, and post-secondary institutions who are involved in:

- » [Setting and writing product and service specifications.](#)
- » [Creating tenders and requests for proposals.](#)
- » [Making low dollar value purchases.](#)
- » [Approving requisitions, purchases and evaluating bids.](#)
- » [Procuring buildings and construction works.](#)

The Buying Green Guide at a Glance: How It Is Organized

This guide has a modular design that is intended to make it easy for users to quickly find the information that is relevant to them. There are three major sections in this guide and two appendices that cover all the basics about buying green.

Within each section or appendix you'll find examples, tips, worksheets and resources that can help you put green procurement into action. Here's an overview of the guide and what you'll find in each section and appendix.

- » **Quick Start Checklist** — This is a simple checklist of the key steps to consider to help integrate green into your procurement and buying decisions. If you only have time to skim one page, then this is the one you should read!
- » **Section 1: A Green Procurement Primer** — If you are not already familiar with green purchasing, then this section will help you understand the basics of green procurement and its benefits. It also debunks some common myths regarding green procurement.
- » **Section 2: Integrating Green into Procurement** — This section is where the practice of green procurement begins. Here is where you and your team will learn how to put green into procurement. It includes the processes and steps that will help staff decide which criteria or standards to use as part of greener procurement. This section also refers to corresponding tools in section 3.
- » **Section 3: Reference Sheets and Worksheets to Support Buying Green** — This section is comprised of a series of tools and worksheets that will make green procurement easier. These tools are designed to support the steps in Section 2 and offer guidance on how to interpret ecolabels, how you can begin to assess the potential environmental impacts of goods and services, and how to consider the green leadership of a company (beyond the green attributes of their product or service). It also includes some suggestions for capturing information to communicate success and finishes with a comprehensive glossary of green terms and definitions.
- » **Appendix A: How to Put Green into the Procurement of Buildings and Construction** — This section provides practical guidance on how to integrate environmental considerations into capital projects such as buildings, renovations, retrofits and procuring construction products and materials. It also contains guidance on what to look for when selecting project consultants.
- » **Appendix B: Green Product Factsheets** — This section provides a set of 15 Green Product Factsheets that give detailed Environmental information on products and services that have been identified as important for government based on criteria such as high value spend, environmental impact and degree of resonance with employees. Each factsheet provides recommended green criteria for writing solicitation documents (based on today's marketplace).

A Quick Start Checklist for Buying Green

The Quick Start Checklist has been developed as a simple tool to help you keep in mind the key steps involved in buying green. Use this checklist as a reminder of what is required to effectively integrate green into the purchasing process.

Read each question below. Check 'yes' if you have addressed the question. Check 'N/A' if it doesn't apply to the particular procurement that you are involved with.

Here are the things you need to do as part of buying green. Have you...

1. Clearly identified and quantified the need for a product or service to ensure that it can't be fulfilled in another way (e.g. could it be bought or leased?) and that the order is correctly sized to avoid waste (e.g. overprinting brochures just because they get cheaper as you buy more). Yes N/A
2. Identified the relevant environmental impacts of the product or service to ensure that possible issues related to packaging, energy consumption and end-of-life disposal are adequately considered to reduce risk and maximize benefits? Yes N/A
3. Developed minimum environmental specifications (such as an ecolabel certification) by consulting the recommendations in the Green Product Factsheets (Appendix B) or based on your own product or service research (see previous question)? Yes N/A
4. Identified if there are likely to be operating (e.g. energy or fuel consumption) or disposal costs that should be factored into your lowest total costing model if you are working with a tender or an RFP? Yes N/A
5. Developed green evaluation criteria for the tender or RFP based on the minimum green standards and your total cost considerations? Yes N/A

A Green Procurement Primer

What you'll find in this section

Read this section to learn about what is meant by green procurement and to find examples of green procurement in action. It provides information on the benefits of green procurement and how it can help advance government's priorities and reduce the environmental impacts of government's operations. In addition, this section debunks some common myths about green procurement.

1.1 What is Green Procurement?

Green procurement is about minimizing negative environmental and health impacts associated with what people buy. It is about buying products and services that are more energy efficient, less toxic, safer for workers, have recycled content or come with less packaging.

Green procurement isn't a new method of purchasing, but rather a refined approach to the way we buy already. It encourages staff to think about:

- » **The need the product or service fulfills**, whether the need can be met in another way or if the purchase needs to be made at all.
- » **A product's impact on the environment over its life cycle** from manufacturing to use and ultimately to the disposal of the product.
- » **The total cost of a product over its life cycle** (rather than just the upfront purchase cost).
- » **Overall value for money for government** (by factoring in quality, performance, price, environmental performance and availability rather than price only).

What is Green Procurement?

Green procurement means seeking products or services that have a lesser or reduced adverse effect on human health and the environment when compared to competing products or services that serve the same purpose.

This comparison may consider raw materials acquisition, product manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service. It is also sometimes called Environmentally Preferable Procurement (EPP).

Green procurement isn't about buying the greenest possible product on the market. Instead, it's about ensuring that the green issues that are strategic priorities for a particular organization are sufficiently considered as part of the overall procurement decision.

What is the Life Cycle of a Product?

The life cycle of a product refers to all the stages of a product's life from-cradle-to-grave, i.e. from raw material extraction through materials processing, manufacturing, distribution, use, repair and maintenance, and ultimately disposal or recycling.

SECTION 1: GREEN PROCUREMENT



Examples of Green Products and Services

Green products and services are innovatively designed to have minimal or reduced impact on the natural environment and enhance workplace health and safety. Examples include:

- » **Recycled paper**, which reduces the amount of greenhouse gas (GHG) emissions associated with harvesting trees and saves water and energy consumed through the manufacturing of non-recycled paper products.
- » **Green cleaning supplies**, which reduce or eliminate the use of toxic chemicals linked to diseases such as asthma and cancer, reduce transportation emissions by shipping in ultra-concentrated formulas, and stop environmental contaminants from ending up in rivers and oceans.
- » **Products carrying ecolabels** such as ECOLOGO or Green Seal, which give buyers assurance that the environmental and health benefits claimed for a specific product have been verified by an independent third party. For more information on ecolabels, see the reference sheet '[The World of Environmental Performance Labels](#)' in Section 3.
- » **Hybrid vehicles**, which get approximately 25 percent better fuel mileage than gasoline fuelled cars because they are powered by both electric and gas-powered motors.

Total Cost of Ownership or Life Cycle Costing

To assess the total cost of ownership of a given product, buyers look beyond a product's initial purchase price and consider the costs associated with the life cycle of a product. Total cost of ownership calculation or life cycle costing is most typically used for equipment that:

- » Will be used for a long time
- » Requires regular maintenance
- » Requires power/fuel supply
- » Uses consumable supplies and parts

Behaviours can also be Green

Your behaviour can also be green. Green procurement encourages you to consider your purchasing habits to see where you can be more efficient and buy less, i.e. reduce your overall consumption and number of purchases.

Examples include:

- Print and copy double sided
- Use electronic data storage
- Dial in—don't drive or fly

SECTION 1: GREEN PROCUREMENT

Green Saves Money

The table below provides an illustrative example of how you could consider the total cost of similar products throughout the life cycle of their purchase including use and disposal:

	Inkjet Printer	Laser Printer
Capital cost	\$69	\$400
Cost of cartridge	\$19 per ink cartridge	\$115 per toner cartridge
Amounts of pages yielded per cartridge	170 pages	8000 pages
Example: 50 sheets of paper used per day, 300 days a year	15,000 sheets per year	15,000 sheets per year
Annual cartridge costs	\$1677 per year	\$216 per year
Extra staff time ordering & replacing cartridges (10 min/cartridge @ \$20/h)	\$294 per year	\$6 per year
Total cost in 1st year of ownership	\$2040	\$622

Source: Small Business Computing www.smallbusinesscomputing.com/ProductReviews/Hardware/a-modern-guide-to-multifunction-printers.html

What this example really highlights is that lowest initial price does not necessarily mean the lowest total cost once you consider other factors, such as maintenance and replacement cost. This is important to keep in mind when you are responsible for stewarding taxpayer money and managing budgets within your department or organization.

Remember, cheapest upfront price does not necessarily mean lowest cost. See a great example from Nalcor Energy in [Section 2](#) for more information on how the total cost of ownership can work to your advantage in a tender.

Did you know?

Out of the 60 million inkjet cartridges and 44 million toner cartridges used each year in Canada alone, less than 8 percent are recycled leaving over 95 million of them being thrown away and ending up in landfill sites. It takes nearly 3.5 litres of oil to make just one printer cartridge. In less than a year, recycling cartridges could save more oil than the 42 million litres spilled by the Exxon Valdez oil tanker.

Sources: InkCanada and Alberta Environment

SECTION 1: WHY?

Did you know?

If each household in Canada replaced one roll of virgin toilet paper with just one roll of recycled toilet paper, we could save 47,962 trees and 65.5 million litres of water.

Source: University of Toronto Scarborough

Did you know?

1 metric ton of recycled paper can save:

- 3 cubic metres of landfill space
- 17 nine metre (pulp) trees
- 29,000 litres of water
- 1,400 litres of oil
- 4,000 kilowatt-hours of energy

And, at the same time, eliminate 30 kg of air pollutants.

Source: New Brunswick Solid Waste Association

Did you know?

A 2008 study about occupational injuries among cleaners in the healthcare sector in British Columbia showed that chemical exposure was responsible for 43 percent of all allergy and irritation incidents among workers.

Source: David Suzuki Foundation

1.2 Why is Green Procurement Important?

The Benefits of Green Procurement

Choosing environmentally preferable products and services can have powerful benefits—for the Provincial Government, for the environment and for wider society. With the exception of the Build Better Buildings policy, the Government of Newfoundland and Labrador has no policies that require officials to buy green, however, government has committed to lead by example in many key areas such as improving energy conservation and efficiency, and diverting waste from landfills. Given this and the many advantages to be gained through green procurement by choice, government wants to actively encourage and facilitate action to green procurement. Benefits include:

✓ Reducing Negative Impacts of Products and Services on the Environment

Green procurement can help an organization to make major cuts in greenhouse gas emissions that cause climate change—through energy efficient construction and transport, and choosing products and services with a lower carbon footprint throughout their life-cycle. The amount of waste that is generated, the use of resources and materials, and air and water quality—all are affected by the purchases we make.

✓ Mitigating Negative Impacts on Health and Safety

Switching to environmentally preferable, less toxic products, materials or substances can improve workplace health and safety while also reducing long-term health risks and liability. Greener products such as cleaners, paints and furniture contain fewer or no toxic and hazardous ingredients and indoor pollutants such as volatile organic compounds (VOCs), therefore improving indoor air quality and reducing the incidence of diseases, such as occupational asthma and cancer related to chemical exposure. Where the workplace is a school or a hospital it can also benefit the health of children, patients and employees and others who would otherwise be exposed to toxins.

✓ Creating Financial Savings

Green procurement is efficient procurement. It can generate considerable cost savings because green products and services typically:

- Use resources such as water, fuel and other resources more efficiently, amounting to considerable savings to government from reduced resource consumption. Examples include fuel efficient vehicles and energy and water saving appliances.
- Are more durable, innovative, and high efficient and are less costly to operate, maintain, replace and dispose of over time.

SECTION 1: WHY?

Did you know? The Federal Government Committed to Green Procurement in 2006

The Federal Government, through the Department of Public Works and Government Services, has a [Policy on Green Procurement](#) that was approved in 2006. The Policy aims to reduce the environmental impacts of government operations and promote environmental stewardship by integrating environmental performance considerations in the procurement process.

Source: Public Works and Government Services Canada

- Lower the risks of hazardous materials or spills, as well as waste and pollution accidents, which can lead to legal action, fines and higher insurance premiums. For example, purchasing biodegradable hydraulic fluids for hydraulic system equipment instead of conventional fluids made of petroleum and toxic chemicals significantly reduces the clean-up costs of spills and leakages.
- Use less toxic and more environmentally friendly products reducing the risk of workplace chemical exposure and illness or disease that could result in absenteeism and liability costs for the employer.

✓ **Transforming the Market for Greener Products and Driving Innovation** Government has a role in demonstrating leadership and contributing to a future that aligns with the public's expectations of environmental stewardship. Buying green supports businesses that are providing products and services with fewer environmental impacts and thus stimulating green, innovative product and business development.

Buying Green Supports Government of Newfoundland and Labrador's Environmental Priorities

In 2011, the Government of Newfoundland and Labrador released its [Climate Change Action Plan](#) and [Energy Efficiency Action Plan](#) that included a commitment to “explore the potential to utilize the government's procurement power to promote greater energy efficiency, lower GHG emissions and reduce waste”. The Province is also continuing to implement its [Provincial Solid Waste Management Strategy](#). Green procurement might be one of the most effective levers to reduce the environmental impacts of government operations.

In the Province of Newfoundland and Labrador, core government and GFBs have already started making greener purchasing decisions. For example, the Newfoundland and Labrador Housing Corporation buys appliances such as ovens, dishwashers and refrigerators that are energy efficient, thereby reducing energy consumption and costs. The Office of the Chief Information Officer (OCIO) only purchases desktops and laptops that are Energy Star 5.0 approved and EPEAT Gold certified. Lastly, other large public institutions have their own green purchasing initiatives. For example, Memorial University of Newfoundland (MUN) has a sustainable food purchasing initiative underway.

Green Procurement in Newfoundland and Labrador Isn't New

At a new long-term government funded care facility in Corner Brook, a number of energy-saving features, like a ground-source heat pump and sensors to turn lights off when rooms are not occupied, have led to significant energy and cost savings. The building uses 53 percent less energy and saves roughly \$270,000 annually compared to a building built to traditional standards.

Source: Government of Newfoundland and Labrador

SECTION 1: MYTHS

Mitigating Environmental Risks: Hydraulic Fluid – City of St. John's

The City of St. John's introduced the Curb it Recycling program for the residents of St. John's in October 2010. In order to implement this program, the City purchased new garbage trucks that could take recycling on one side and regular household garbage on the other. In order to ensure environmental safety, part of this program required the use of environmentally friendly hydraulic fluid. In the past, when hydraulic fluid was spilled (mostly due to busted hoses), the fleet department was called out to fix the hose and use absorbent on the spilled fluid. This process could take anywhere from 30 to 60 minutes. Now, there is no environmental hazard if the fluid is spilled on the street or enters a storm drain. The cost of this product is significantly more than regular hydraulic fluid but its use mitigates the risk to the environment and saves time.

Source: City of St. John's



1.3 Busting Green Procurement Myths

Green buying practices and the marketplace for greener products have come a long way in the last 25 years. Nevertheless, people still cling to a variety of myths about green products and services. Let's look at a few of the more common myths and set them straight.

It is going to cost more.

In many cases, purchasing green products now costs the same as buying traditional or less environmentally preferable products. Energy saving laptops or monitors, for instance, typically cost no more than less efficient ones.

In some cases, costs are slightly higher. A price comparison of a 5000 sheet/case (8-1/2" x 11") of conventional copy paper to a case of copy paper certified by the Forest Stewardship Council (which assures that the paper comes from responsibly managed forests) shows that the environmentally preferable option costs \$1 more per case; a price difference of approximately 2 percent. In other cases, costs are still significantly higher, e.g. for bio-based hydraulic fluids, often because the marketplace is not as developed yet. In these cases, avoiding substantial environmental risks and mitigation costs in the future can justify a higher purchasing price (see example on the left).

When you consider the lifecycle or total cost of a product or service — green often turns out to be the most responsible financial choice due to operating cost savings, lower costs of disposal and lower health and safety risks. Green cleaning products made of ultra-concentrated formulas are de facto cheaper as less detergent is stored and used for the same cleaning tasks. By switching to green cleaning products, Dalhousie University was able to reduce costs as new cleaning products have a higher dilution rate and last much longer. They were also able to decrease their cleaning product inventory by 75 percent.

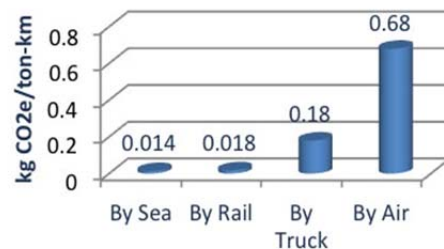
Green products and services don't work as well.

These days, it is very rarely the case that a green product or service doesn't perform just as well as a traditional product. Most of the time, green products meet the same performance and quality specifications as their standard counterparts and may actually provide superior characteristics. In many product and service categories, such as office paper, IT equipment, cleaning supplies, office furniture, and appliances, the green market is well developed and products have long since proven themselves and often demonstrate superior green features. For example, a laptop that is certified to the gold level of the Electronic Product Environmental Assessment Tool (EPEAT) standard performs just as well as a non-certified product but has superior green features, such as having a minimum of 65 percent reusable/recyclable content or 90 percent recyclable packaging.

SECTION 1: MYTHS



Transportation GHG emissions per ton-kilometre of product shipped



Source: Emissions factors from: Climate Leaders, Optional Emissions from Commuting, Business Travel and Product Transportation. US EPA, May, 2008.

There are not enough green products and services available.

The market for green products has exploded in the last ten years. In some product categories, almost every choice on the market is green to some extent. Think about appliances for example. Almost all dishwashers, clothes washers, refrigerators and freezers have an ENERGY STAR certification and many appliances are required to have an EnerGuide rating. Yes, some are more efficient than others, but it would be difficult to find one on the market that was a real 'power hog' like the old beer fridges often found in basements. For example, ENERGY STAR dishwashers are now 67 percent more energy efficient than a 1990 model. Paint is similar; nearly all paints on the market today are low in Volatile Organic Compounds (VOCs).

Green procurement will take too much time.

While it can be challenging, at first, to consider changing the way you select products and services to consider more environmentally preferable choices, green procurement doesn't necessarily have to take much extra time, especially not after it has become part of the regular purchasing process. Initially, it requires a learning process to consider environmental issues when developing and evaluating purchasing requirements. In the case of government tenders and RFPs, there is usually ample time during the assembling process to think about the green risks and opportunities that might apply to a product or service category. And after developing a number of solicitation documents, staff will be more familiar with recurring environmental issues and it will require less time.

If it is a small-scale purchase, such as a laser printer or stapler, then it shouldn't take any extra time to consider if the product is over-packaged (or likely to be) in a material that will be difficult or impossible to recycle. And it only takes a few minutes to get familiar with some of the common environmental certifications like ECOLOGO, ENERGY STAR or Green Seal, and it's easy enough to look for these symbols as you consider different product options. For more information on ecolabels, see the reference sheet '[The World of Environmental Performance Labels](#)' in Section 3.

Our transportation emissions void the benefits.

Regardless of what type of product you buy (green or not) transportation emissions can't be avoided. By necessity, bulk materials and finished products are shipped to Newfoundland and Labrador by sea and air. Transportation by sea is the most energy efficient and least greenhouse gas emissions intensive. Transportation emissions are directly related to the mode of transportation, the mass of the goods/materials being shipped, and the distance travelled. Shipping by air generates 48 times more greenhouse gas emissions than transportation by sea. Your best choice is shipping by rail or sea regardless of the type of product. (See the sidebar diagram for reference.)

Integrating Green into Procurement Roles and Processes

What you'll find in Section 2

This section is all about putting green procurement into practice. It starts off by describing how everyone needs to work together to make buying green successful. Then it describes the basic steps to help you incorporate green considerations into your purchasing decisions.

Getting Everyone Involved in the City of Edmonton

The City of Edmonton has recently created a new Sustainable Purchasing Strategy that specifically calls on stakeholders across the corporation to get involved in making their policy successful. This call to action asks that General Managers, Branch Managers, end-users, spec writers, Office of Environment staff, Materials Management staff, administrative staff, and even corporate communications staff come together as a team to scale up the impact and opportunities associated with sustainable purchasing.

Source: City of Edmonton

2.1 Who Needs to be Involved for Green Procurement to be Successful?

Everyone has a role to play in making sustainable purchasing successful; it's not just one group or person.

Like the old saying that it takes a village to raise a child, buying green takes a team to deliver reduced environmental impacts and reduced costs. Successful green procurement involves:

Executives: who have the responsibility to build a culture that values total cost over cheapest price and who are involved in setting budgets and making approvals.

End-users: who have information and insight into the need for a product or service, the potential options, the quantities and the performance of previous products or suppliers.

Specification Writers: who will help define the technical requirements for a product or service and set criteria that will be used to evaluate bids.

Administrative Staff: who place orders and make low dollar value purchases and have the opportunity to make day-to-day choices that are greener and showcase new products or services.

Directors and Senior Managers: who sign-off on specifications, set budgets and need to ensure that green risks and opportunities are considered within tenders and RFPs.

Purchasing Staff: who can help assess opportunities in the marketplace for green products and services and help end-users and specification writers identify possible green criteria or total cost measures that can result in better purchasing decisions.

Environmental and Sustainability Staff: who can help with research of best practices, identifying green impacts, informing specifications and participating in reviewing bids to help validate green claims or recommendations.

Vendors: who can provide current information on the state of the marketplace and which green products or services are readily available at a reasonable cost.

Project Consultants: who need to be informed of the impacts of their decisions on operating costs while they are considering options in the design phase of capital projects.

2.2 A Basic Framework for Buying Green

Let's start off by identifying four basic steps in the procurement process and identifying how green can fit into each of them.

- » **Defining the need for a Product, Service or Purchase:** whereby one determines exactly what needs to be purchased, what the options are and in what quantity the product or service should be purchased.
- » **Identifying the Potential Green Impacts and Setting Specifications:** whereby one considers what the likely green impacts are for a given product or service and then determines which of these are priorities and translates them into specifications, evaluation criteria or information to inform low dollar value purchasing.
- » **Selecting Between Product Choices or Vendors:** whereby one reviews bids, proposals or product options and makes a best value selection based on total cost, tenders or low dollar value purchases, or multiple criteria in the case of RFPs.
- » **Communicating Results and Successes:** whereby one communicates the results of a purchase to interested stakeholders and describes some of the key outputs or successes that may have come from making a more environmentally preferable selection.

Now let's look at each of these steps in a bit more detail.

2.3 Defining the Need for a Product or a Purchase

Often, the greenest purchase is the one you don't make at all! Think about the need for a product or service before creating an order or requisition—and if you think it's absolutely necessary, then ensure you 'right-size' the order to reduce waste and the consumption of unnecessary resources. Here's some more guidance on this step.

Questions and Tips for Assessing the Need for a Product or a Purchase

It is important (and useful!) to assess the actual need for a new purchase or an upcoming contract renewal because going out and buying something new might not always be the best choice. So, before making a purchase, consider the following six questions:

1. **Do you really need this product or service, or can you fulfil the desired need without purchasing a new product or service?**

For example: Switching from bottled water to drinking water fountains or tap water could significantly reduce the consumption of natural resources (oil, energy, etc.) and arguably reduce the number of recycling containers and the energy used in reprocessing plastic bottles.

2. **Can you purchase a service or labour rather than a product?**

For example: Rather than purchasing a snow-blower, which requires large inputs of metals, plastics and fossil fuels, you might want to hire a snow removal service where shared equipment is used. This can also support local employment.

3. **Can you rent, lease, borrow or share the product rather than buying it? If this is not reasonable, could you buy it second-hand?**

For example: Rather than buying and installing new wall-to-wall carpet in your office, consider carpet tile leasing where the customer pays an annual fee for flooring services while the contractor retains ownership of the carpet tiles and replaces and recycles worn or damaged carpet tiles.

SECTION 2: STEP 1

An Example of Green Procurement in Action: Memorial's Office Furniture Redistribution Initiative

The [Memorial University Furniture Finder](#) is a new online system for the responsible redistribution of used office furniture on the St. John's campus. The goal of this initiative is to provide the university community with the opportunity to obtain quality used furniture thereby reducing the need to purchase new items. This project will also decrease the amount of used furniture being declared surplus and leaving the university.

Source: [Memorial University Furniture Finder](#)

Did you know? The Government Purchasing Agency has a Surplus Asset and Auctioneering Service

For over 20 years the Government Purchasing Agency has provided warehousing facilities and auctioneering for the disposal and repositioning of government assets. GPA assists departments with the removal of surplus material by transferring an item to another department where a need has been identified. Assets that no longer have a life within government are either sold to the public through a tender process or auctioned to the highest bidder. The combination of these services assists in decreasing the need for destroying or disposing of materials that are no longer suited for the original need or purpose.

Source: Newfoundland and Labrador Government Purchasing Agency (GPA)

4. Can you upgrade or refurbish an existing asset rather than buy a new product?

For example: Rather than buying a new PC when only one part is broken or the storage capacity is no longer sufficient, benefit from the modular structure of IT and replace the damaged part or add a storage device where possible.

Tips for Forecasting the Demand and 'Rightsizing' Orders

When you are planning to make a purchase, take the time to carefully estimate the right size of your order by checking what is in stock and consider upcoming events or programs that will require specific materials and supplies. This is especially important when ordering printed materials. Larger orders are usually discounted – the more you order, the steeper the discount – which often results in increased waste. Reviewing the need for a product can save money and avoid unnecessary environmental impacts.

5. If it is essential, can you reduce the amount of the order to ensure you don't over-consume and order more than you need?

For example: Food waste from catered meetings is all too common. When ordering for a meeting, make sure that you match the amount of food ordered with the demand from each meeting participant. Set up a review and learning process to be able to modify the amount of food you order the next time.

6. Can you 'rightsize' the purchase to ensure your product is sufficient for its intended use, without being too large, powerful or wasteful?

For example: Let's assume a department needs to purchase ten new vehicles this year that are exclusively used for passenger transportation within a city environment. Help reverse the trend to ever larger vehicles, by purchasing vehicles with the passenger space and horsepower suitable for the job.

Halifax Regional Municipality — 'Rightsizing' a Vehicle Fleet

To support their green fleet sustainable purchasing initiative, Halifax has developed a Vehicle Right-Sizing Filter and Life Cycle Evaluation Methodology that are formally applied to annual budgeting and business planning processes. Implementation of these tools required the development of standardized collaborative processes between Fleet Services, Clients and Financial Services, and thus enabled continued improvement in green procurement initiatives that help achieve targets for greenhouse gas emissions reduction.

Source: Clean Air Partnership, Green Procurement Scan October 2011.

Did you know? Green Contributes to Improving Worker Productivity

A case study by the Rocky Mountain Institute demonstrated how high indoor environmental quality through improved in-house lighting, cooling and heating systems increased worker productivity by 16 percent providing a rapid payback on the increased capital investment. Likewise, a study by office furniture manufacturer Herman-Miller showcased a 7 percent increase in worker productivity after moving to a green, day lit facility. A study by Kats (2003) examined a sample of 33 green building projects. It found that the increased worker productivity and decreased sick time in these buildings created a benefit of \$37 to \$55 U.S. dollars per square foot.

Source: Green-Buildings.com

2.4 Identifying the Significant Green Impacts of a Product or Service

Once you have reviewed and confirmed the need for a purchase, it's time to identify the potential green impacts of a particular product or service.

All products and services have environmental impacts, some more than others. It's really important to remember that there is rarely a 'single right' green procurement choice.

There are almost always trade-offs that occur when deciding which environmental issues are most significant, such as recycled content, energy efficiency, water consumption or air pollution. For example, the choice between concrete versus wood for the framing and walls of buildings isn't necessarily clear cut. Concrete can be much more durable than wood and may have other potential benefits, such as fire safety, but the high amount of energy used to produce concrete can potentially offset such benefits. These considerations need to be looked at on a case by case basis. You'll benefit from research and input from end-users, specification writers, approvers or your internal green experts as you work towards the best decision for your organization.

The starting point is to focus on the green impacts and issues that have already been deemed important by government or your particular department and organization. For example, the Government of Newfoundland and Labrador has already set priorities around climate change adaptation, energy efficiency, reduced GHG emissions to tackle climate change and reducing waste going to landfills, as directed in government strategies, such as the Climate Change Action Plan 2011, the Energy Efficiency Action Plan 2011 and the Provincial Waste Management Strategy. This sets a natural starting point for considering which green issues should be given most importance if it comes to trade-offs.

Let's look at the main purchasing processes and how you can go about identifying impacts and setting requirements in each of the following cases:

- i. **Low dollar value purchases:** such as smaller scale purchases or routine orders, such as office supplies, catering or small equipment.
- ii. **Tenders:** where detailed specifications are used when requesting suppliers to provide competitive bids on products or services and where evaluation focuses on lowest costs (ideally lowest total cost).
- iii. **Request for Proposals (RFPs):** which can be used for strategic and larger scale purchases where it is helpful to evaluate options or vendors on multiple criteria and seek a 'best overall value' solution.

Did you know? Lowest Total Costs for Tenders

Applying a lowest total cost approach to evaluating tenders is permitted under the current legislation in Newfoundland and Labrador.

Source: Government Purchasing Agency



I. Identifying Environmental Impacts for Low Dollar Value Purchases

To keep things simple for identifying the environmental impacts of low dollar value purchases, start by focusing on the following key green issues (listed in general order of importance) that may be relevant to your purchase:

- » **Packaging:** means the amount of packaging that is used to transport and contain products and the type of packaging, e.g. cardboard, plastic, pallets, shrink wrap, Styrofoam, some of which can be difficult or costly to recycle.
- » **End of Life Disposal:** means what happens with a product when its useful life has finished and whether it will end up in a landfill or if it can be recycled or refurbished.
- » **Energy Efficiency:** means using less energy to provide the same service.
- » **Recycled Content:** means that a product is made from materials that have already been used and collected in a recycling program, thereby saving natural resources.
- » **Non-toxic Ingredients:** means products that are made without poisonous or harmful chemicals or ingredients.
- » **Greenhouse Gas Emissions (GHGs):** means the amount of heat-trapping gases that accumulate in the Earth's atmosphere. GHG emissions are causing climate change; the most significant GHGs are carbon dioxide (CO₂), methane, and nitrogen oxides.
- » **Sustainably Harvested Resources:** means raw materials that are harvested or extracted in a way that doesn't deplete or endanger their ongoing and future availability.

For more information on these terms, please see Section 3 for the Reference Sheet ['Defining Green Procurement Terms'](#).

To prioritize which of these key green issues is more significant than the others, keep your analysis simple and don't complicate things. A proven approach is to start by focusing on the environmental priorities of your department or organization. For instance, the Multi-Materials Stewardship Board (MMSB) may be more interested in packaging and recycling than in energy efficiency, while Nalcor Energy may be more concerned with energy efficiency and conservation.

Did you know?

There are now over 447 different ecolabels being used to certify the environmental attributes of products and services in 197 countries across 25 industry sectors. Learn more by visiting www.ecolabelindex.com

Source: www.Ecolabelindex.com

The City of Edmonton Engages End-Users to Reduce Transport Packaging

When the City of Edmonton wanted to use green purchasing to reduce waste and the costs related to waste disposal, they talked to the end-users in warehousing operations to identify where it would be possible to replace cardboard packaging with reusable tote containers. End-users identified that cardboard boxes cluttered loading docks, were bulky and difficult to handle, and cost money to recycle. The Materials Management Branch worked with the concerns of end-users to develop a specification for their supplier of safety equipment and replacement parts to move to plastic reusable containers which saved natural resources and took up less space in the loading bays, as they are removed for reuse immediately after the delivery has been made rather than being left for disposal by the City.

Source: Municipal Collaboration for Sustainable Purchasing (MCSP)

II. Identifying Environmental Impacts for a Good or Service that will be Purchased through Tenders and RFPs

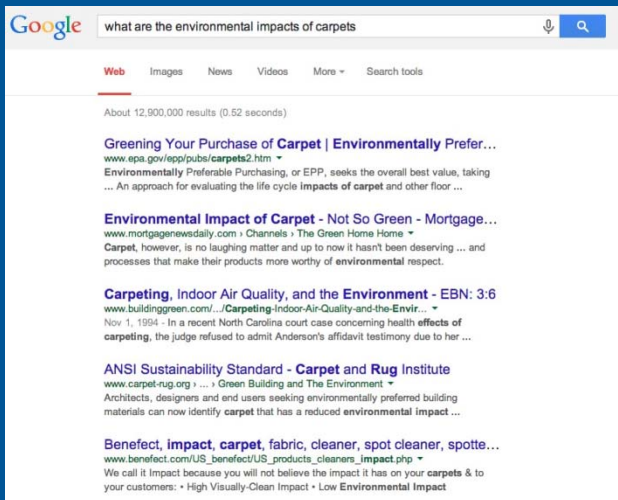
Identifying the environmental impacts of purchases conducted through tenders and RFPs is similar to that for low dollar value purchases. Start by considering that green impacts are possible—and then shortlist those, which are likely to be from both a positive (e.g. improving energy efficiency) and negative (e.g. using toxins) perspective. The following is a basic process that can be used to identify the potential and/or significant green impacts for a given procurement.

- 1. Engage with the End User:** When developing requirements for tenders and RFPs, involve the end user, who often influences or holds the budget, from the beginning of the process. Help them find solutions to THEIR challenges through using greener products and services. Ask them about targets for reduced costs or whether they spend lots of time dealing with excess packaging. Help them find green options, such as reduced packaging, to address their challenges. Consider how piloting these options will help develop the end user's confidence or comfort that they will work.
- 2. Conduct Basic Internet Research and Consult the Product Factsheets:** Use a search engine to look for the environmental impacts of your desired product. For example, a simple search for “environmental impacts of catering” resulted in a list of useful links to pages with good introductory information about the specific green issues of catering services, such as waste (food, disposable service ware, napkins, plastic bottles), food produced with synthetic pesticides and hormones, or transported from afar. You can also consult the product factsheets in [Appendix B](#) of this guide for detailed information on 15 commonly procured products and use the recommendations provided to support your purchasing decisions.
- 3. Consult an Internal Expert:** If your organization has an environment or sustainability group or a green team, consult these internal experts to get help thinking through the possible impacts of a product or service. Remember to also see what specifications have been successfully used before. You can also contact the Government Purchasing Agency or the Office of Climate Change and Energy Efficiency for examples of good practice from other government departments or government funded bodies.

SECTION 2: STEP 2

Did you know? Google Can Help with Green Information More than you Might Think

If you are interested in knowing about the environmental impacts of carpeting, try a simple Google Search on the following phrase: “What are the Environmental Impacts of Carpets?” and check out all the helpful information you’ll have access to within seconds. Click on this hyperlink to see the results!



4. **Ask Questions of Suppliers:** Talk to vendors or reach out to industry associations such as the Newfoundland and Labrador Environmental Industry Association or the Canadian Manufacturers and Exporters Newfoundland and Labrador, to access their knowledge of green product impacts and which green features the marketplace can deliver.
5. **Use the ‘Identifying Potential Green Impacts’ Worksheet in Section 3:** In collaboration with the stakeholders involved in your purchase, use the worksheet in [Section 3](#) to identify the three most significant green issues or impacts as identified through these steps and your research. For each impact area listed in the worksheet, identify whether your product has a high, medium or low impact. Those with a high or medium impact are the ones you likely want to set green specifications for in your tender or set criteria for your RFP.

Remember, green procurement isn’t about buying the greenest possible product on the market. Instead, it’s about ensuring that the relevant green issues are sufficiently considered as part of the overall procurement decision. Therefore, always keep your organization’s priorities in mind when trying to decide on which green issues to address.

Green Procurement in Action

Green Cleaning Pilot Project at Memorial University (MUN), St. John’s

Goal: The purpose of the pilot project was to examine whether conventional cleaning chemicals could be replaced with products that were more environmentally friendly, more effective in cleaning than conventional cleaners and thus improve the health and safety of the university community. For two years, Facilities Management at MUN tested green cleaners that were certified by Green Seal or Environmental Choice and also met stringent environmental and occupational safety standards. Tested cleaners included floor finishes, floor strippers, carpet shampoos, bathroom cleaners and microfibre cloths.

Results: The green cleaners outperformed the conventional cleaners by far; less cleaning product was used as green cleaners were more effective and had efficient dispensing systems. Air quality was improved as green cleaners contained only low volatile organic compounds. Green cleaners are now used in all university buildings as a result.

Source: Memorial University, [The Gazette](#)

Use the Green Product Factsheets in Appendix B

Remember that guidance on how to green your procurement decisions for the products listed below is contained in Appendix B to this guide:

1. [Appliances](#)
2. [IT Equipment](#)
3. [Copy Paper](#)
4. [Interior Lighting](#)
5. [Janitorial and Cleaning Supplies](#)
6. [Light Duty Fleet Vehicles](#)
7. [Office Furniture](#)
8. [Waste Hauling & Recycling Services](#)
9. [Wood for Construction](#)
10. [Flooring](#)
11. [Architectural Paint](#)
12. [Office Supplies](#)
13. [Drinking Water](#)
14. [Food and Catering Services](#)
15. [Vehicle Consumables](#)

Developing Requirements for Greener Products or Services and Getting Approvals

Developing product requirements is about scanning the marketplace and doing your homework to determine the green specifications to use for a low dollar value purchase, tender or RFP.

Once you know what the important issues are to consider, then start assembling some requirements or specifications for your purchase.

I. Identifying Environmental Requirements for Low Dollar Value Purchases

When developing specifications for low dollar value items, look for eco-certifications such as ECOLOGO, ENERGY STAR and Greenguard.

Labeling and certification programs set criteria for superior environmental performance, compared to most conventional alternatives. The Ecolabel Index tracks ecolabels and environmental certification schemes around the world. Please see Section 3 for the [‘The World of Ecolabels and Third Party Certifications—Reference Sheet’](#) to get an overview of the most common examples and which ones to look for when making a particular product purchase.

Remember when making low dollar value purchases to ask your vendor how they can show greener behaviour when they are delivering their products and services. For example, you could ask your food or catering supplier to use reusable plates, compostable cups and cutlery, and to ‘right-size’ an order to avoid waste. Or you could ask a meeting space provider whether they use recycling bins or if local food can be included on the menu.

If you see an opportunity to purchase a significantly ‘greener’ product or service and you think that there are costs or other implications, then it may be important to get approval for your recommendation from your supervisor. Similarly, if there are green options available, but you don’t believe that they are the right fit for your requirements, then you may want to advise your supervisor in advance to keep him or her in the loop.

Did you know? It’s not just the initial purchase!

Green procurement helps select more environmentally preferable products. But that’s not the end of the story. Greener behaviour such as regular maintenance can also reduce environmental impacts. For instance, did you know that regular vehicle maintenance may improve fuel efficiency by up to 1.5 percent?

Source: Natural Resources Canada (NRCAN)

Dalhousie University Tender Specifications for Grounds Vehicles (Trucks)

- Electric Vehicle or Fuel Efficient Vehicle with Combined Fuel Combustion Rating of a minimum of 6.5 L/100 km (36.2 mpg) or less
- Capable of carrying up to ½ tonne
- Open back with dumping capability
- Legal on Nova Scotia highways and HRM roads (for Dalhousie Halifax Campuses)
- 4 by 4 capability
- Used or new. New requires a 12-month warranty; used a three-month warranty and less than 80,000 km
- At least two seats
- Normal functions such as cab heat, defrost, radio, wipers, horn, daytime running lamp
- Up-to-date MV safety inspection sticker
- Local service locations maintenance experience
- Automatic transmission
- Will require a road test and optional mechanical assessment

Source: [Highlighting Best Practices—Sustainable Procurement Resources for Municipal, Academic, Schools and Health & Social Service \(MASH\) Organizations](#), Dalhousie University, 2012

II. Developing Green Specifications for a Good or Service that will be Purchased through a Tender

The time to integrate green into the tender process is while specifications are being developed and written.

End-users, specification writers and purchasing staff need time to work together to ensure that the green impacts identified in the prior step are adequately considered, and that the appropriate specifications are developed to address potential environmental risks or capitalize on green innovation opportunities. Your first step is to check and see if the product or service you are buying is already profiled in one of the Green Product Factsheets in [Appendix B](#). If so, you'll already have a head start on creating your requirements and specifications.

The key issues and impacts that you identified in the '[Selecting the Green Issues for your Tender or RFP](#)' (Section 3) can be used to inform the green requirements you will want to include in your tender document. For example, Dalhousie University has developed a set of specifications for Grounds Vehicles to procure more environmentally preferable vehicles that include a number of green specifications (see the sidebar textbox for their specifications). Similarly, when developing specifications for paint, the Newfoundland and Labrador Housing Corporation specifies only E2 or E3 paints approved by the Master

Did you know? Newfoundland and Labrador Hydro is incorporating Green into Engineering and Construction Specifications

Nalcor Energy is striving to continuously incorporate green considerations into its engineering and construction specifications, including the use of high efficiency, variable speed electric motors, LED lighting, improved energy management systems, etc. Many of these acquisitions are conducted as energy conservation projects. For example, in 2013, Newfoundland and Labrador Hydro purchased new LED lighting for the Hydro Place (Nalcor Head Office) parking lot, and building exterior, which will be installed as soon as weather permits. The crown corporation also upgraded its timers to more effectively manage the lighting system.

Source: Nalcor Energy

SECTION 2: STEP 2

Newfoundland and Labrador Housing Corporation Paint Specifications

Extract from Paint Specifications:

1. Exterior Ferrous Metal Paint:

- Shall be Amercoat, #5450 (Pearl Grey Finish Coat), or approved equal

2. Exterior Flat Latex Paint:

- Material must be listed as an approved product on the Master Painters Institute (MPI) #10 (latex, exterior, flat-MPI gloss level 1-2)
- Minimum MPI “Environmental/Performance Rating” (E-Range of E2 or E3)

3. Exterior Semi-Gloss Latex Paint:

- Material must be listed as an approved product on the Master Painters Institute (MPI) #11 (latex, exterior, semi-gloss-MPI gloss level 5)
- Minimum MPI “Environmental/Performance Rating” (E-Range of E2 or E3)

4. Interior Semi-Gloss Latex Paint:

- Material must be listed as an approved product on the Master Painters Institute (MPI) #54 (latex, interior, semi-gloss-MPI Gloss level 5)
- Minimum MPI “Environmental/Performance Rating” (E-Range of E2 or E3)

5. Interior Flat Ceiling Paint:

- Material must be listed as an approved product on the Master Painters Institute (MPI) #53 (latex, interior, flat-MPI gloss level 1)
- Minimum MPI “Environmental/Performance Rating” (E-Range of E2 or E3)

Source: Newfoundland and Labrador Housing Corporation

Painters Institute (MPI)—E3 standing for the lowest volatile organic compounds (VOCs) range, and E2 the next lowest.

To get approval for your specification, present the specification for tender to your supervisor or the person who is accountable for signing-off on a specification. Consider using your completed [‘Selecting the Green Issues for your Tender or RFP’](#) Worksheet (Section 3) to help you explain your decision-making.

III. Developing Green Specifications for a Good or Service that will be Purchased through a Request for Proposal (RFP)

The nature of a Request for Proposal (RFP) process is that you have more flexibility in asking for criteria beyond the minimum specifications that might be used in a tender.

This is the perfect opportunity to integrate green considerations into the specifications or scope of services and test what the market has to offer. Within RFPs you have the flexibility to ask for information related to the value added green features and benefits of a product that might be desirable but not mandatory.

The significant product impacts that you identified in the [‘Selecting the Green Issues for your Tender or RFP’](#) Worksheet (Section 3) that match your organization’s priorities should be the mandatory specifications in your RFP. These will need to be developed based on your research and discussions with internal and external stakeholders. If there are green impacts that may not be your top priority, then include these as desirable specifications and evaluate them separately.

For example, you may wish to specify that your IT equipment vendor ensures that all PCs and Laptops come with an Electronic Product Environmental Assessment Tool (EPEAT) Gold rating as a mandatory requirement. In addition, you may want to see which vendors can provide a packaging take-back option as a desirable criteria and give this some weighting in your evaluation.

As already mentioned, the OCIO requires that all desktops and laptops are EPEAT Gold Certified and Energy Star 5.0 approved.

SECTION 2: STEP 2

Acadia University: Using an RFP to Look for Local Food

In an RFP directed at foodservice companies to deliver campus food services, Acadia University placed an emphasis on sustainability and local food procurement. The wording in the RFP and the contract was carefully crafted to ensure that local food would be procured where possible, but the foodservice management company could propose its own plan for meeting these requirements. Here's how it read:

Proponents will submit a copy of company policies, which demonstrates evidence of a commitment to environmentally friendly products and sustainable practices. Proponents are encouraged to include a promotional plan to achieve improvements in dining services during the full duration of a contract. Acadia is very interested in the sustainability plan for food service on our campus. How will the proponent contribute to this mission? The proponent should also include existing or potential targets it will set in conjunction with its frontline and supervisory employees.

Source: [Growing Demand—Local Food Procurement at Publicly Funded Institutions in Nova Scotia](#)

In addition, you can also inquire about the green practices of the vendor themselves. For example, are they implementing waste reduction and recycling in their operations? Or are they actively promoting energy conservation? It's appropriate in an RFP to look above and beyond just the features of the product or service that a vendor may be providing. See Worksheet 3 '[Measuring Vendor Leadership—Example Questionnaire](#)' for a list of questions that can be adapted to collect information on the green leadership practices of a vendor.

Don't forget that green procurement also applies to services. Consider the interesting initiatives that Nalcor Energy is considering to help green its service contracts (see below). Note how it is focusing on initiatives that promote energy conservation and efficiency, and lead by example in its own operations.

To get approval for your green specifications and evaluation criteria, present your recommended mandatory and desirable specifications for the RFP and show the weighting of each criteria. Remember, if you are omitting a green impact area from consideration then you may be asked to justify your decision.

Nalcor Energy: Finding Ways to Green Contracting Cleaning Services


In its specifications for security and cleaning services at its head office at Hydro Place, Newfoundland and Labrador Hydro included the requirement for continuously monitoring lighting to ensure it is switched off in unoccupied areas. Cleaning personnel now have to go from floor to floor as a group, turning off all lights behind them. Nalcor Energy is considering changes to the schedule for its next cleaning contract to reduce the occupancy requirements.

Source: Nalcor Energy

2.5 Evaluating Options and Selecting your Product or Vendor

I. Selecting Products and Services or Vendors for Low Dollar Value Purchases

When it comes to selecting products and services or vendors for **Low Dollar Value** purchases, look for items that have an identifiable ecolabel (see [‘The World Of Environmental Performance Labels—Reference Sheet’](#) for a reference sheet on the most common ecolabels). These logos give assurance that a product has the green features and benefits. Choose the product that represents the best combination of features from the **CHOOSE** column, and avoid as many as possible from the **AVOID** column. Remember, you can use the Green Product Factsheets in [Appendix B](#) to help you identify ecolabels and other requirements for 15 common items that are purchased within government.

CHOOSE	AVOID
<p>Certified products:</p> 	<p>Not certified, if a certified alternative is available. Please consult the reference sheet The World of Environmental Performance Labels in Section 3</p>
Sustainably harvested renewable natural resource (e.g. wood, glass, cotton, plant material, etc.)	Un-renewable, persistent (i.e. non-biodegradable), synthetic, toxic (e.g. hydrocarbon/petroleum based)
100 percent recycled content	Virgin content
100 percent recyclable, where all materials can be captured in a technical cycle (e.g. no emissions leading to poor air quality, soil or water pollution)	Not 100 percent recyclable, where metals, minerals and manufactured compounds leak into the natural environment (e.g. packaging where materials cannot be separated, carpets that release gases)
Organically grown, untreated	Chemically grown/treated
Efficiently powered by renewable energy, energy efficient and low-level carbon emissions (e.g. hydro, solar, wind, wave, alternative fuels)	Powered by fossil fuels, energy inefficient and high carbon emissions (e.g. gas, diesel, natural gas, propane, etc.)
Durable and reusable	Disposable
Locally grown (predominantly for food, where possible), starts in the community, 80 km radius, province wide	Grown in other provinces, abroad (predominantly for food)

Example:

Imagine a scenario where you organize the catering for a meeting, and you have to decide between reusable plates and cups or compostable ones. If your office has a dishwasher, or your caterer can provide reusable dishes, that might be your best option. If your building complex has a composting facility, you might opt for compostable plates and cups.

Again, remember this is not a right or wrong decision. Often, there will be trade-offs across the green attributes of products and services and you need to decide on which ones are the most important to you. How you decide depends ultimately on what will best fulfil your need and foster green purchasing.

II. Selecting Products and Services or Vendors Procured through Tenders

Since all vendors will bid on the same specifications, ultimately the vendor who meets the specifications and offers the lowest total cost or lifecycle cost will be selected.

In the example below for washing machines, both suppliers meet the mandatory specification of an ENERGY STAR certification. However, one machine has a significantly higher energy use but a lower purchasing price, whereas the other is more energy efficient and uses less water but is also more expensive to acquire. The total cost table below reveals the preferable option.

	Washing Machine A	Washing Machine B
Initial Cost	\$500	\$700
Energy costs/year	\$91	\$54
Water costs/year	\$90	\$57
Total annual operating costs	\$181	\$111
Energy costs (lifetime – 7 years)	\$637	\$378
Water costs (lifetime – 7 years)	\$630	\$399
Total lifecycle costs	\$1,767	\$1,477

Data Source: Natural Resources Canada ENERGY STAR Savings Calculator

So, despite the substantial price premium of \$200 for washing machine B compared to machine A, the total lifecycle cost of machine B is lower. It is also worth noting how substantive operating costs are as compared to the initial price. Not factoring these costs into an evaluation can sometimes be a significant oversight.

There is sometimes a misconception that when using a tender the evaluation can only be based on the lowest initial or first cost of a product or service that meets the specification, and that incorporating the total cost or lifecycle cost isn't permissible. This simply isn't true. So long as the methodology used to calculate total cost is transparent to bidders, objective and defensible, then it can be used as the basis for awarding tenders. Nalcor Energy offers an interesting example of using a tender to purchase vehicles—and incorporating the costs of fuel consumption into their evaluation.

What is Total Cost/LifeCycle Costing?

A financial estimate intended to help buyers and owners determine the direct and indirect costs of a product or service, including the total cost of acquisition, operations, maintenance and disposal.



Incorporating Total Cost or Lifecycle Cost Into Tenders — It Can Be Done!

Nalcor Energy Tender Evaluation for Vehicles uses Lowest Total Cost by Considering Fuel Consumption

Nalcor Energy (Buyer) is an environmental leader, and is ISO 14001 certified. One of the key elements of this certification is to continuously improve their environmental performance. In keeping with their commitments, all vehicle tenders will be evaluated based upon the lowest Total Tendered Price for the vehicle meeting all conditions of the specification. The Total Tendered Price includes the tendered cost of the vehicle, PLUS the total cost of fuel consumption for a three year period.

Fuel costs per vehicle are based on 25,000 km driven per year for a total of 75,000 km (3 year period); with a ratio of 55 percent highway and 45 percent city driving. The cost per litre of fuel used in the calculation will be the Bloomberg Oil Buyer's Guide posted price for St. John's as published on the Friday previous to tender closing. The total fuel costs will be added to the tendered price for the vehicle, by the Buyer to determine the total bid price for the submission.

The bidder shall include the original equipment manufacturer's published fuel consumption information for the vehicle (litres per 100 km) with the bid submission. Both highway and city rates shall be included. The stated consumption will be validated against the results published in the Natural Resources Canada—Energide.

Where discrepancies exist, the [Natural Resources—Energide](#) ratings will be used to calculate the fuel costs. The total fuel costs are determined by the Buyer using the following formulas:

Highway Formula: $(75,000 \text{ km} \times 55\% \times \text{hwy fuel consumption rate (L)}) / 100 = \text{Total Hwy Litres}$

City Formula: $(75,000 \text{ km} \times 45\% \times \text{city fuel consumption rate (L)}) / 100 = \text{Total City Litres}$

Total Fuel Cost = (Total Hwy Litres + Total city Litres) x Cost/L

Notes: The vendor is not required to add the fuel cost into the bid price quoted. The cost of the fuel will be included in the evaluation process by the Buyer as a separate item. In instances where the make/model of a vehicle which is indicated in the bid by any supplier is not listed in the [Natural Resources—Energide](#), the tender item will be evaluated using the vehicle cost submissions only. Fuel consumption rates will not be used to evaluate that specific item.

Source: Nalcor Energy

III. Selecting Products and Services or Vendors through RFPs

Within RFPs you have the flexibility to include both mandatory and desirable specifications. Like a tender, mandatory specifications are features that you know you want within a product or a service, such as an ENERGY STAR rated appliance or copy paper with 30 percent post-consumer recycled content. Desirable evaluation criteria can be used to reward additional performance or features above and beyond your minimum requirements. The more of these desirable criteria a vendor addresses, the higher their overall RFP score will be. Within RFPs it's important that green is given a meaningful weighting along with other criteria; 5 points out of 100 for green doesn't usually make a difference in a competitive bid process.

For example, the University of British Columbia has a substantive commitment to driving environmental benefits within the purchasing for Student Housing and Hospitality Services and will typically use at least 10 and often 15-20 points to evaluate environmental criteria. In some cases where green impacts are considered to be significant, or where prices are expected to be competitive, and thus not a significant differentiator, environmental performance is given an even higher weighting such as 30 or 40 points out of 100. Remember, in an RFP you have the flexibility to evaluate the features of a product—but also the green operating practices of a vendor (as distinct from their product attributes).

The example below illustrates a typical evaluation matrix for a Request for Proposal. In this example the typical evaluation criteria of cost, quality, performance or solution are included. However, also included are criteria for the green features of a product, as well as criteria for the vendor's green leadership regarding operating practices.

Criteria	Vendor A	Vendor B	Vendor C
Total Cost (35 points)	25	22	27
Quality (25 points)	18	20	15
Performance/Functionality (20 points)	16	18	20
Product Environmental Performance (e.g. percentage of recycled content, take back of packaging) (10 points)	5	8	3
Vendor Environmental Leadership (10 points)	6	5	7
Total Score	70	73	72

In this example a range of evaluation criteria have been scored for each of the three vendors—A, B and C. Each one has scored well in different categories, and their overall scores are quite close. A blended overall approach has been used to evaluate the successful vendor (Vendor B), who happened to score lowest on total costs and green leadership, but who got the highest overall score based on scoring well on other criteria, including the environmental features of their product. Green criteria didn't trump other criteria (e.g. Vendor B's quality score was the highest of all three vendors); but it did play a role in Vendor B having best overall value. Again, it is not necessarily about choosing the greenest option but about the best blended score of your selected criteria.

Using RFP's to Evaluate Cost and Environmental Criteria to Achieve Best Value

The Multi Materials Stewardship Board (MMSB) is responsible for implementing the used beverage container recycling program (UBCRP) in Newfoundland and Labrador.

To fulfill this mandate, it has historically used a network of independently owned/operated Green Depots throughout the Province, augmented by transportation contractors who move the beverage containers from the Green Depots to a number of primary processing facilities. Primary processing contractors (one in Labrador and one on the Island) are responsible for compacting and crushing the used containers for shipment to end markets and transportation service providers deliver processed product to end markets. Transportation and processing services have been historically procured through a public tender process where interested parties meeting minimum qualifications and lowest price were awarded the contract.

Unlike MMSB's approach to tendering for collection and processing services, other jurisdictions in Canada have contracted for collection and processing services through the use of a Request for Proposals (RFP) process. These RFP processes have evaluated proponents on not only the bid price, but also on their ability to deliver the best value per dollar spent by taking into consideration environmental and social factors, and the delivery and servicing capacity of proponents. In doing so, innovative collection and compaction technologies have been introduced into those jurisdictions which have resulted in increased quality of service delivery and decreased operating costs, while decreasing the volume of transportation services needed to service beverage container recycling programs. These decreases in transportation services have lowered the volume of heavy vehicle traffic on public roads and decreased the greenhouse gas emissions.

MMSB has long recognized that utilising a transportation and processing service delivery model that employs innovations such as on-site or on-board compaction could significantly reduce the number of trips needed to collect and transport beverage containers and would likely result in improvements in service delivery. In addition, reducing the number of trips would likely result in cost savings and decreased greenhouse gas emissions.

In the winter of 2013, with the existing contracts set to expire in the summer of 2014, there were no local service providers employing these innovations in compaction technology. MMSB realized that were it to undertake a traditional public tender process to secure transportation and collection services, it was likely that the successful bidder would operate the beverage program utilizing a traditional service delivery model that may have delivered lowest cost, but may not have delivered best value. Thus, MMSB sought and received permission to employ an RFP process for the procurement of transportation and processing services.

In 2013, utilizing the RFP process to evaluate potential transportation and processing service providers on their ability to deliver the best value service, MMSB was able to include environmental impacts such as greenhouse gas emissions under greater consideration. As a result, MMSB secured a service provider for the used beverage container recycling program that utilises on-board compaction and preprocessing technologies that will decrease the greenhouse gases associated with these activities by 50 percent, reduce heavy truck traffic on public roads by 267,000 km per year and reduce the annual operating cost of the UBCRP by approximately 20 percent.

SECTION 2: STEP 3

Did you know? Xerox Canada's process for recycling and remanufacturing used supply items

Some manufacturers are redesigning products to be more easily disassembled for recycling and take back for reconditioning, remanufacturing and resale. Through the Green World Alliance collection/reuse/recycling program for spent imaging supplies, Xerox customers return more than 2.5 million cartridges and toner containers annually. Over the last 20 years, Xerox supplies recycling programs have kept more than 145 million pounds of waste out of landfills. Xerox Canada has recently launched Eco Box, a new simplified return and recycling program that allows returning 5 to 30 used supply items all at once.

In terms of price, as discussed before, to define best value you should calculate the total cost. List all activities associated with owning the product or receiving the service (storage, maintenance, buying additional equipment, energy use, waste disposal, administration). Estimate the costs of these activities then calculate and compare the 'total cost' for each option.

So, choosing your preferred supplier and green product or service from a best value perspective comes down to who generated the best score on the basis of weighted meaningful criteria. Remember these tips:

- » **When evaluating RFPs**, choose those vendors who have met your minimum specification and who have addressed most of your desirable criteria and thus scored the highest.
- » **From a best value perspective**, the buyer will want to look for willingness from the vendor to work on green issues. For example, if one group scored overall highest but didn't score well on green, then one possibility is to engage them to improve their performance over the life of the contract.
- » **Seek out a supplier who shows a commitment to green values**, for example, by showcasing an environmental or sustainability policy on its website or publishing a sustainability or Corporate Social Responsibility (CSR) report.
- » **You may have a long-standing relationship with a supplier** and would rather work with them to find a sustainable product than switching to a different supplier. With longer-term suppliers, you can talk about green issues as part of your typical visit or meetings, along with planning or adjusting the cost and quality of the product or service you are getting.

2.6 Communicating Results and Telling the Green Procurement Story

Making the voluntary choice to communicate the results of your green procurement activities will help you measure financial and environmental benefits and make green purchasing meaningful for everyone involved, including employees, management and suppliers.

Telling the Green Procurement Story

Regularly communicate successes internally and to suppliers, whether by email, newsletters, on your website or in meetings. Sharing these wins will help get buy-in for green procurement.

Tracking Data to tell a Deeper Story

As your work evolves you may wish to begin to monitor and track data related to implementing your buying green efforts. Start by considering some simple key performance indicators (KPIs). There are two types that are recommended:

1. Activity Indicators: measure whether procedures, resources, and knowledge are being used to foster green procurement; whether you are using green criteria to impact procurement decisions.

Example: Number, percentage or total dollar value of contracts, tenders or RFPs with green specifications. Number, percentage or total dollar value of RFPs where green criteria are given a value of 10 points or higher.

2. Outcome Indicators: measure the environmental or social impacts that result from incorporating green considerations into purchasing; how do decisions impact packaging, energy efficiency and GHG emissions in the supply chain. Often you need information from the supplier to be able to accurately measure things like reduced resource consumption, trees saved, energy saved, etc. Outcome Indicators are sometimes more difficult to track.

Example: The amount of waste reduced by using eco-efficient packaging solutions or the amount of fuel saved and greenhouse gas emissions avoided by consolidating delivery schedules.



SECTION 2: STEP 4

The following table offers some examples of possible KPIs that you might voluntarily select to help track progress on your green procurement efforts.

Key Performance Indicator Details	
ACTIVITY INDICATORS	
✓ Number, value and percentage of vendor agreements with mandatory specifications related to green criteria	This indicator will measure how many bid documents included mandatory environmental specifications (e.g. ecolabels) and can be compared with the total number of bids issued for that year.
✓ Number, value and percentage of vendor agreements with custom environmental specifications	This indicator will measure how many bid documents included desirable environmental specifications and can be compared with the total number of bids issued for that year.
OUTCOME INDICATORS*	
✓ Amount of solid waste reduced or avoided as a result of packaging	This indicator will measure the amount of waste reduced via custom specifications or supplier innovation.
✓ Amount of GHG emissions reduced or avoided	This indicator will measure the amount of GHG emissions reduced via custom specifications or supplier innovation.
✓ Amount and types of toxins removed from direct and indirect procurement	This indicator will identify which toxins have been removed from products, services and construction and estimate the total volume of toxins that have been avoided, e.g. the amount of volatile organic compounds.
✓ Volume of water conserved	This indicator will examine the amount of water being conserved by suppliers with water conservation programs (directly related to your water footprint).**

* For some products, e.g. for copy paper, there are online calculators that help you calculate the number of trees saved when a certain amount of post consumer recycled copy paper. Outcome indicators often rely on data provided by suppliers to estimate environmental impact reductions. Best practices acknowledge that these figures are best estimates.

** The water footprint is equal to the water required to produce the goods and services purchased and consumed by you.

Remember, start with something simple and build your reporting or storytelling program over time. See [‘What to Report when Buying Green—Worksheet Template’](#) for a template that can be adapted to help you tell your story.

The World of Environmental Performance Labels

— Reference Sheet

Purpose

To provide an understanding of the different types of ecolabels that exist and to identify common ecolabels to consider when making purchases. Ecolabels can be considered as mandatory or desirable product/service specifications.

Audience

This worksheet is intended to support purchasing staff who are responsible for developing product specifications for market solicitations as well as clerical staff who make low dollar value purchases.

What are Ecolabels?

Ecolabels are labels, which identify proven environmental preference of a good or service within a product category. Contrary to self-styled green claims or symbols made by manufacturers and service providers, ecolabels are awarded by an impartial third-party for certain products or services that meet transparent environmental leadership criteria. They provide information to consumers about the relative environmental quality of a product.

Products must be certified to these environmental leadership criteria through the independent third party entity in order to be able to display the ecolabel.

- » **Criteria are usually designed to allow for only a certain portion** of the total market of a given product category to qualify (e.g. Germany's Blue Angel program targets approximately 15–25 percent of products in the marketplace).
- » **Usually awarded for a fixed time period** with an administrative cost or other expense involved in using the labels on products.
- » **Based on a single product attribute** (e.g. recycled content or energy efficiency) or a full life-cycle assessment (LCA) of a product's environmental impact.

Different Types of Environmental Performance Labels

Ecolabels are only one type of environmental performance labels. There are many other environmental performance labels or declarations used around the world. The International Organization for Standardization (ISO) has identified three different types:

Table 1: Three Types of Environmental Performance Labels

Type	Details
Type i: Environmental labelling (i.e. ecolabels)	These labels are commonly known as ecolabels. They are voluntary, multiple-criteria-based, third party programs that award a license that authorizes the use of environmental labels on goods and services indicating overall environmental preferability within a particular good or service category based on life cycle considerations. The label is awarded to goods and services that are verified by an independent third party as complying with the criteria.
Type ii: Self-declaration claims	Informative environmental self-declaration claims made by companies and not verified by an independent third party.
Type iii: Environmental declarations (e.g. report cards/information labels).	Voluntary presentation of quantified environmental data of a product; under pre-set categories of parameters set by a qualified third party and are based on a full life-cycle assessment of the good or service by a qualified third party and present the environmental performance of a product to enable objective comparisons between products fulfilling the same function. They are administered by a company or industry association and have limited application in the consumer market.

Background

Ecolabels were first developed when governments, businesses and citizens became increasingly concerned about environmental protection. When businesses recognized that these concerns could be turned into a market advantage, the first green claims, labels and declarations appeared (e.g. natural, eco-friendly, energy efficient). As consumers became bombarded by these unsubstantiated claims, confusion and mistrust grew. The term “greenwashing” for unproven or immaterial claims emerged. Without standards and verification by an independent third party, consumers could not be sure that the environmentally preferable claim for a certain product or service was true. Thus, public and private organizations were founded to provide credible and impartial ecolabelling.






What Environmental Performance Labels Should You Look For?

Many environmental performance labels provide relevant information and are worth considering. However, you should first look for ecolabels, as, in most cases, they are widely available, easy to identify and certified by an independent third party. They take the workload off you to do your own verification of self-declared claims or do a more comprehensive comparative analysis of environmental product declarations to other products. The table below outlines several ecolabels that are commonly recognized in Canada and describes which product categories they are applicable to.

This is not an exhaustive list as many ecolabels are available in the marketplace. To discover what other ecolabels may be relevant to your purchases visit www.ecolabelindex.com. The goals of this website are to gather all ecolabels in the world onto one common platform, provide standard data and analysis on the ecolabels, and help companies buy and sell ecolabeled products and services.






WORKSHEET #1: ECOLABELS

Table 2: Example Type I Ecolabels by Product Category

Product Category	Look for the Logo	Details
<ul style="list-style-type: none"> Paper products Wood products 		<p>Forest Stewardship Council</p> <p>The Forest Stewardship Council (FSC) is an independent, not for profit, non-government organization that provides standard setting, trademark assurance and accreditation services for companies and organizations interested in responsible forestry products.</p>
<ul style="list-style-type: none"> Adhesives/sealants Air filters Ceiling systems Cleaning products/systems Doors Electronic equipment Floor/wall finishing Flooring Furniture Paints Insulation Textiles Surfacing materials 		<p>GREENGUARD Indoor Air Quality Certified</p> <p>The GREENGUARD Environmental Institute (GEI) certifies low emitting interior products and building materials that meet current indoor air quality standards.</p>
<ul style="list-style-type: none"> Most major appliances Heating and cooling systems 		<p>EnerGuide</p> <p>EnerGuide is a Natural Resources Canada initiative that helps consumers purchase the most energy-efficient equipment on the market. It shows how much energy appliances consume in a year of normal service and makes it easy to compare the energy efficiency of each model to others of the same size and class. EnerGuide rates the energy consumption of a spectrum of products, from the best performing to the worst; not just for the most energy efficient in a product category.</p>
<ul style="list-style-type: none"> Household appliances Electronics 		<p>ENERGY STAR</p> <p>Household and office appliances and electronics that have earned the ENERGY STAR meet strict energy efficiency guidelines set by the US Environmental Protection Agency and US Department of Energy and are among the top most energy efficient products in their class.</p>
<ul style="list-style-type: none"> Electronics including desktops, laptops, workstations and computer monitors 		<p>Electronic Product Environmental Assessment Tool (EPEAT)</p> <p>EPEAT is a global environmental rating system that helps purchasers identify and compare environmentally preferable computers and other electronics. EPEAT also provides a clear and consistent set of performance criteria for the design of products, and provides an opportunity for manufacturers to secure market recognition for efforts to reduce the environmental impact of its products.</p>

Product Category	Look for the Logo	Details
<ul style="list-style-type: none"> • Automotive products and services • Building and construction products • Cleaning and janitorial products • Consumer products • Container, packaging, bags, and sacks • Electricity products • Events • Fuels, lubricants and related products • Marine products • Office furniture, equipment and business products • Printing products and services • Pulp and paper products 		<p><u>Ecologo Product Certification</u></p> <p>ECOLOGO certified products, services and packaging are certified for reduced environmental impact. ECOLOGO certifications are voluntary, multi-attribute, lifecycle based environmental certifications that indicate a product has undergone rigorous scientific testing, exhaustive auditing, or both, to prove its compliance with stringent, third-party, environmental performance standards.</p>
<ul style="list-style-type: none"> • Electric chillers • Paints and coatings • Window and doors • Household cleaning products • Food preparation and food service packaging • Floor finishes and strippers • Hand soaps and hand cleaners • Institutional and industrial cleaners • Paper towels, napkins and tissue paper • Printing and writing paper 		<p><u>Green Seal</u></p> <p>Green Seal is an independent, non-profit organization that strives to achieve a healthier and cleaner environment by identifying and promoting products and services that cause less toxic pollution and waste, conserve resources and habitats, and minimize global warming and ozone depletion.</p>
<ul style="list-style-type: none"> • Food and agricultural products 		<p><u>Canada Organic Regime</u></p> <p>The Canada Organic Regime is a Government of Canada regulated system for organic agricultural products. It gives assurance on the production of high quality food using sustainable management practices, which avoid damage to the environment, and ensure the ethical treatment of livestock.</p>

WORKSHEET #1: ECOLABELS

Product Category	Look for the Logo	Details
<ul style="list-style-type: none">• Food and agricultural products		<p>US Department of Agriculture (USDA) Agricultural Marketing Service (AMS) National Organic Program (NOP)</p> <p>The American Organic Certification Agency sets environmental standards for food and agricultural products and is widely recognized in Canada.</p>
<ul style="list-style-type: none">• Accommodation facilities (hotels, motels and resorts)		<p>Green Key Eco-Rating Program</p> <p>A graduated rating system for accommodation facilities committed to improving their fiscal and environmental performance. Depending on the environmental performance of the rated facility, ratings range from 1 Green Key up to 5 Green Keys.</p>
<ul style="list-style-type: none">• Tropical food and agricultural products• Soccer balls• Flowers		<p>Fairtrade Canada</p> <p>Fairtrade Canada is a national, nonprofit Fair Trade certification organization, and the only Canadian member of the Fairtrade International (FLO). It promotes Fairtrade certified products in Canada to improve the livelihood of developing world farmers and workers. The following fair trade products are currently certified by Fairtrade Canada and available throughout the country: coffee, tea, cocoa, sugar, fresh fruit, grains (rice and quinoa), spices and herbs, cotton, wine, flowers, nuts and oils (shea butter and olive oil), and sports balls.</p>
<ul style="list-style-type: none">• Bottled water• Food equipment• Home water treatment systems• Home appliances• Plumbing and faucets• Pool and spa components		<p>NSF International</p> <p>The NSF label can be found on millions of consumer, commercial, and industrial products. Products are evaluated and certified against a set of standards to help ensure health and safety for consumers and the environment.</p>
<ul style="list-style-type: none">• Cleaners & floor care• Laundry and dishwasher detergents• Graffiti remover• Vehicle cleaning products• Drain maintenance• Holding tank treatment• Septic system treatment• Inkjet printers• Pavement treatment		<p>DfE Formulator</p> <p>The Design for the Environment (DfE) Formulator was designed with the US Environmental Protection Agency to promote risk reduction through pollution prevention (also known as source reduction). EPA recognized the need to develop a cleaner, safer technologies program to work with industry to design products, processes, and technologies that are competitive but environmentally preferable.</p>

Product Category	Look for the Logo	Details
<ul style="list-style-type: none"> • Apparel fabric • Baby care • Body cleansers • Building exteriors • Carpet fibre • Cleaning products • Fabrics for office furniture • Food and beverage • Lighting • Office seating • Office workstations • Whiteboards 		<p><u>Cradle to Cradle®</u></p> <p>The Cradle to Cradle Certified™ Products Standard is a multi-attribute, continuous improvement methodology that evaluates products across five categories of human and environmental health and design for future life cycles. It is administered by the Cradle to Cradle Products Innovation InstituteSM. Product certification is awarded at five levels (Basic, Bronze, Silver, Gold, Platinum), with the expectation that an applicant will optimize each aspect of their product over time.</p>
<ul style="list-style-type: none"> • Furniture systems and components • Hard surface flooring • Paint • Wall coverings • Casework • Insulation 		<p><u>SCS Global Services Green Product Certification</u></p> <p>SCS Global Services is a for profit company providing third-party environmental, sustainability and food quality certification, auditing, testing and standards development. The Green Product Certification Program includes ecolabels on indoor air quality, material content and responsible sourcing. It offers three indoor air quality certification programs as part of its ongoing efforts to improve the environmental performance of building products: Indoor Advantage™, Indoor Advantage Gold™ and FloorScore®. The program applies to any product generally used within an enclosed indoor environment, specifically within a commercial office or classroom space.</p>
<ul style="list-style-type: none"> • Building and construction • Building interiors • Neighbourhood development (in pilot) 		<p><u>LEED: Leadership in Energy and Environmental Design</u></p> <p>The LEED (Leadership in Energy and Environmental Design) Green Building Rating System® is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the US Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution.</p>

Resources

- Global Ecolabelling Network

Selecting the Green Issues for your Tender or RFP — Worksheet

Purpose

This worksheet will help you identify the environmental impacts that are likely to be most relevant to a product or service that you are going to purchase. It is intended to help choose which green issues should be included as minimum or mandatory specifications in your tender or RFP.

Before you get started with this worksheet, make sure that you have checked to see if there is a Green Product Factsheet (see [Appendix B](#) of the Buying Green Guide) that describes the relevant green issues for the product or service you are about to purchase. The Green Product Factsheets pre-identify the most significant green issues that you can include in a tender or RFP.

Instructions

Your first step is to identify the relevant green issues through some basic product research and through speaking with end-users or any green experts within your organization. Second, you'll need to consider which green issues you'll want to include in your tender or RFP. As discussed in the main text of the Buying Green Guide, there are often trade-offs involved when it comes to deciding which green issues to focus on for your purchase. This worksheet will help you with that process.

Read each question below and check the appropriate box to indicate your best understanding of the potential scale of the green impact (High, Medium or Low or Don't Know). If you aren't sure about the scale of the impact then you'll want to do some more research or consult with others within your organization.

Where there is potential for significant impact (e.g. you have marked energy use as high) then you'll want to ensure a specification or criteria is included for this issue within your tender or RFP. If an impact area received a medium or low rating, then check to see if it is related to one of your organization's core environmental strategy areas. If it does, then you'll likely want to include this in your tender or RFP. Otherwise, these impact areas can be optional criteria that you may include within an RFP scenario where you have more flexibility to see how vendors can address a variety of issues.

Name of Tender/RFP

Completed by/Contact Details

Date Completed

WORKSHEET #2: GREEN ISSUES

Issues/Impacts

What is the likely level of impact?

Energy Use: What is the potential energy use of the product over its lifetime? Is it likely to be significant? For example, if you are buying a large appliance check “High”. If you are buying cleaning products then check “Low”

High Medium Low Don't know

Recycled Content: Is the product made from a potentially scarce resource or a non-renewable resource (e.g. tropical hardwood, old growth timber, or a petroleum based product). If so, check “High”. If the material that the product is made from is easily renewable then check “Medium” or “Low”.

High Medium Low Don't know

Product Recycling and Disposal: Can the product be easily recycled at the end of its natural life, or will it be collected by the vendor as part of a product stewardship or ‘take-back’ program? If so, check “Low”. If it is likely to be expensive or difficult to recycle then check “High”.

High Medium Low Don't know

Packaging: Does the product come with non-recyclable packaging or difficult to recycle packaging (e.g. Styrofoam™, pallets, moulded plastics)? Or will the packaging be costly to manage and handle? If so, check “High”. If the packaging can be easily recycled then check “Medium” and if there is minimal packaging or it can be returned to the vendor then check “Low”.

High Medium Low Don't know

Greenhouse Gas (GHG) Emissions: What is the level of GHG emissions in the making or using of the product? Will it have a significant ‘carbon footprint’? If so, check “High”. If the GHG emissions are likely to be low then check “Low”.

High Medium Low Don't know

Note: You may need to consult some research or get help from a ‘green expert’ to estimate the carbon footprint of a product.

Toxic/Hazardous Chemicals: Does the product contain toxic chemicals that could have a negative effect on human health and safety? If so, check “High”. If the ingredients are completely natural or organic then check “Low”.

High Medium Low Don't know

Other Issues/Impacts (e.g. water conservation, local air quality etc.)

High Medium Low Don't know

Results:

Make sure a specification or criteria is included in your tender or RFP for all the questions that have resulted in a “High” rating. For those that are “Medium” or “Low”, consider how important these issues are to your organization and then make a decision on whether to include them or not. Remember, you’ll need to do some upfront research before completing this worksheet, and it is often best to work with other end-users, specification writers or internal ‘green experts’ to work through this process.

Measuring Vendor Leadership

— Example Questionnaire

Purpose

This questionnaire identifies practices where vendors could show green leadership in their operations and at a corporate level. The questions or the tool itself can be used to gather insights from vendors on a self-disclosure basis. It could be used as part of the evaluation within a Request for Proposal (RFP), or it could be used for engaging vendors on a more informal level regarding their green values and practices (as a conversation guide). Use the questions below, or draw examples from them, to begin to assess the green leadership practices of your vendors. More 'yes' responses indicate a higher level of leadership. Scoring can be kept simple by assigning a standard value to each 'yes' response to arrive at a total score that can be compared across vendors (e.g. 1 point per 'yes').

Instructions to Vendors

Our organization aims to recognize and give value to vendors that are demonstrating leadership and innovation in their environmental practices. Please answer the following questions to help us assess your areas of green innovation and leadership at the corporate or enterprise level within your organization. Please focus on the practices particular to your operating company or division—and not those of parent or subsidiary entities.

Name of Tender/RFP

Name of Vendor/Contact Details

Date Completed

Environmental Management & Stewardship

1: Tell us what policies and programs your company has in place to manage its environmental impact:

- a) We have a documented environmental or green plan Yes No
- b) We have an environmental management system registered to ISO 14001 Yes No
- c) We have a system registered, certified or recognized by another standard (e.g. EMAS)
Please specify _____ Yes No
- d) We have a non-registered, but audited, environmental management system Yes No
- e) We conduct compliance audits to health, safety and environmental standards Yes No
- f) We produce a publicly available annual environmental, CSR, sustainability or accountability report Yes No

2: Tell us how your company works to reduce its greenhouse gas (GHG) emissions:

- a) We measure our GHG emissions and have developed a reduction strategy Yes No
- b) We publicly report our GHG emissions Yes No
- c) We have set publicly available GHG reduction targets Yes No
- d) We have set a target for the use of renewable or alternative forms of energy and have developed a strategy to reach this target Yes No

WORKSHEET #3: VENDOR LEADERSHIP

- e) We have retrofitted our facilities, our fleet and/or made process improvements to decrease GHG emissions and energy use Yes No
- f) We have an alternative transportation program for employees (e.g. public transit subsidy, cycling facilities, carpooling program) Yes No
- g) We purchase from shipping/delivery companies that have taken steps to reduce their GHG emissions Yes No
- h) We operate in third party verified green buildings and have developed a plan to meet third party verified standards (such as LEED, BREEAM, etc) in as many of our facilities as possible. Yes No
Please specify the verification system _____

3: Tell us how your company works to reduce waste in its daily operations:

- a) We conduct regular audits to measure the total amount of solid waste generated by our facilities and have a waste reduction strategy Yes No
- b) We have set publicly available waste reduction targets Yes No
- c) We have an office recycling program that includes office paper, beverage containers, batteries and printer cartridges Yes No
- d) We have other recycling programs in our operations Yes No
Please specify additional materials recycled _____
- e) We work with our suppliers to minimize packaging in order to reduce the waste generated in our facilities Yes No
- f) We take back used products and packaging from customers and ensure it is recycled or reused as often as possible Yes No

4: Tell us how your company works to reduce the use of toxins and properly manage hazardous substances:

- a) We are not in violation of any local, national or international laws related to the use of toxins and management of hazardous substances Yes No
- b) We have a toxic reduction strategy/policy that aims to reduce toxins across all operations Yes No
- c) We measure the implementation of our toxic reduction strategy/policy against a pre-determined set of performance metrics and verify performance with a third-party Yes No

5: Tell us how your company works to reduce other environmental impacts:

What to Report when Buying Green

— Worksheet Template

Purpose

This template has been designed to assist you in voluntarily communicating any results from your **Buying Green** activities and helping you create success stories to share with others within government and engage suppliers. Stories can be powerful tools for generating recognition, sharing best practices with others and engaging end-users, specification writers and decision-makers in further developing your Buying Green efforts.

Use the following template as a guide to assemble information or data that might be relevant to your purchase. Summarize the benefits and successes as best you can in the story box at the end, or simply create a few key messages to share with your supervisors or others within your organization. This template is intended to be used by anyone involved in the **Buying Green** process. This kind of information is most often assembled after a purchase is completed — and sometimes even several months later, after the benefits or results can be accurately estimated.

Information to Help Communicate Successes and Tell the *Buying Green* Story

1. Briefly describe the good or service that was purchased.

2. What was the type of procurement?

Low Dollar Value Purchase Tender Request for Proposal

3. Identify the vendor or vendors if appropriate.

4. If appropriate, state the approximate value of the contract on an annualized basis.

Name of Tender/RFP

Completed by/Contact Details

Date Completed

WORKSHEET #4: BUYING GREEN

5. What is the term of the contract?

6. Identify any green specifications for the product or service that were initially requested or suggested as desirable. I.e. What were you hoping to get?

7. Describe the green product features that were actually realized such as less packaging, the product was made from recycled content, energy efficient, non-toxic. I.e. What did you actually get?

8. Identify the main environmental issues/impact areas that were affected by buying this product or service

- | | |
|----------------------------------------------------------------|---------------------------------------------------------|
| <input type="checkbox"/> Packaging | <input type="checkbox"/> Product Recycling and Disposal |
| <input type="checkbox"/> Energy Use | <input type="checkbox"/> Greenhouse Gas Emissions |
| <input type="checkbox"/> Natural Resource Use/Recycled Content | <input type="checkbox"/> Toxic/Hazardous Chemicals |

WORKSHEET #4: BUYING GREEN

9. Key Messages and Lessons Learned:

Use the information above to create a brief story about the product or service, its green features, and how your department, organization or government is benefiting from it.

Here's a simple example:

Green cleaning Project at Memorial University, St. John's

» **Overview:** Memorial University ran a pilot project to examine whether conventional cleaning chemicals could be replaced with products that were more environmentally friendly, more effective in cleaning than conventional cleaners and improved the health and safety of the university community. For two years, Facilities Management at MUN have been testing green cleaners, which were certified by Green Seal or Environmental Choice and met stringent environmental and occupational safety standards. Tested cleaners included floor finishes, floor strippers, carpet shampoos, bathroom cleaners and microfibre cloths.

» **Key Results:** The green cleaners outperformed the conventional cleaners by far—less cleaning product was used as green cleaners were more effective and had efficient dispensing systems. Air quality was improved as green cleaners contained only low volatile organic compounds. Green cleaners are to be used in all university buildings going forward.

Defining Green Procurement Terms

— Reference Sheet

Term	Definition
Acid Rain	Acidic compounds caused by pollutants such as sulfur dioxide (SO ₂) and nitrogen oxides (Nox) that collect in the atmosphere, are absorbed by clouds, and create acidic rainfall.
Best Value Procurement	A procurement system that takes into account factors such as quality and expertise, not only price, when selecting vendors or contractors.
Bio based	Derived from plants, derived from living matter, derived from renewable biological resources such as forestry materials, or renewable domestic agricultural materials, including plant, animal, or marine materials; generally safer for the environment than petroleum-based counterparts. Products labeled as “Bio-based” are not necessarily compostable unless specified as such.
Biodegradable	Capable of disintegration by biological means. Typically, composed of organic matter that can be readily decomposed by a wide variety of microorganisms. Technically, composed of almost any material since with enough time, some microorganisms can decompose almost anything.
Biodiesel	A substitute for petroleum based diesel fuel that is produced from agricultural crops such as soybeans.
Biofuel	A fuel derived from renewable plant and animal materials. Examples include ethanol (often made from corn), biodiesel (vegetable oils and liquid animal fats), green diesel (e.g. from algae) and biogas (e.g. methane from animal manure).
Brominated flame retardants	Hormone disrupting chemicals such as polybrominated diphenyl ethers (PBDEs) that are added to computers and office electronics to reduce the risk of fire.
B20	Bio-fuel composed of 20 percent biodiesel and 80 percent gasoline, see also biodiesel.
Carcinogen	A substance that causes or promotes the development of cancer. The carcinogen may act by altering or damaging the cell’s DNA or by impairing the body’s natural defenses that protect against the formation of cancerous cells.
Chlorine free	Manufactured without chlorine or chlorine derivatives.
CO₂	Carbon dioxide, an important greenhouse gas that absorbs infrared radiation in the atmosphere contributing to climate change.

WORKSHEET #5: GREEN TERMS

Term	Definition
Compostable	The label “compostable” is regulated by industry standards that are measurable, verifiable, and certifiable. Meets D6400 composting standards set by the American Society for Testing and Materials (ASTM): Under a managed composting program, the product must 1) break down to carbon dioxide, water, inorganic compounds, and biomass at a rate similar to paper, 2) disintegrate into small pieces within 90 days, so that the original product is not visually distinguishable in the compost, and 3) leave no toxic residue. <i>Also see bio-based and biodegradable.</i>
Corporate Social Responsibility	Corporate social responsibility is a term used to express an organization taking responsibility for the impact of its activities upon employees, customers, citizens, communities and the environment.
De-Inking	The process that removes inks, clays, coatings, binders and other contaminants in preparing waste paper to be recycled.
Ecolabel	A voluntary labelling system for food and consumer products.
ECOLOGO	Multi-attribute environmental certification managed by the Government of Canada.
Ecosystem	A complex set of relationships among the living resources, habitats and residents of an area. It includes plants, animals, micro-organisms, water, soil and people. Everything living in an ecosystem is dependent on the other species and elements in that ecological community. If one part is damaged or disappears, it has an impact on everything else.
Efficacy	The ratio of the light output to the power input (lumens/watt). The higher the efficacy of a lamp, the more efficient it is.
Environmental impact	An environmental impact is any change to the environment, whether adverse or beneficial, wholly or partially resulting from organizational impacts.
Environmentally Preferable Products	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.
Environmentally Preferable Purchasing (EPP) Guide	Guidelines by the US Environmentally Protection Agency (EPA) used to assist federal agencies to purchase green, sustainable products.
Ethanol	Fuel type made by fermenting plant sugars; nearly all ethanol produced in the United States today are from corn sugars. See also “E85”.
E85	Vehicle fuel type composed of 85 percent ethanol and 15 percent gasoline.

WORKSHEET #5: GREEN TERMS

Term	Definition
Fibre	The smallest units of organic growth used in producing pulp due to characteristics of stiffness and tensile strength. In recycling, the fibre strands are recovered from waste paper and reprocessed on the paper machines.
Fluorescent lighting	A lamp that produces visible light by fluorescence, especially a glass tube whose inner wall is coated with a material that fluoresces when an electrical current causes a vapor within the tube to discharge electrons.
GREENGUARD	Independent standards developer authorized by the American National Standards Institute focused on indoor air quality.
Greenhouse gas emissions	Heat-trapping gas in the Earth's atmosphere responsible for climate change. Greenhouse gas emissions include carbon dioxide, methane, CFCs, HFC, and nitrous oxide.
Green Product	A product that is more environmentally friendly than comparable products.
Hazardous Material	A hazardous material (solid, liquid, gas) is a substance or a combination of substances with properties which, if not adequately controlled, could result in human illness or injury. Hazardous materials may contain hazardous chemical agents and/or hazardous biological agents (e.g., micro-organisms).
Lamp Life	Number of hours for 50 percent of an average batch of lamps to burn out on a well-defined operating schedule. In practice, some lamps will burn out before this time while others will operate much longer.
Leachate	A liquid that has been polluted or made toxic by percolating through garbage.
Lifecycle	All stages of the "life" of any process, product, or activity including raw material, extraction, processing, manufacturing, filling, packaging, transportation, use/reuse, maintenance, recycling, recovery and disposal.
Life cycle costing	The process of economic analysis to assess the total cost of system investment and ownership, taking into consideration the operational constraints and performance requirements of the system or product under study.
Low dollar Value Purchase	Low dollar value purchases such as office supplies.
Lumens	Total quantity of light emitted per second by a light source.

WORKSHEET #5: GREEN TERMS

Term	Definition
Mandatory Environmental Standard	Mandatory environmental standard refers to the application of an ecolabel or criteria in agency procurement processes to achieve a minimum level of environmental performance.
Mill Broke	Waste generated during the paper making process which is regularly re-pulped and put back into finished products.
National Energy Code of Canada for Buildings (NECB)	Provides minimum requirements for the design and construction of energy-efficient buildings and covers the building envelope, systems and equipment for heating, ventilating and air-conditioning, service water heating, lighting, and the provision of electrical power systems and motors.
Ozone	1. Ground level pollutant that causes respiratory damage, 2. Component of upper atmosphere that prevents ultraviolet sunlight from reaching the earth's surface
Post-Commercial and/or Pre-Consumer Waste	Waste generated after the product leaves the manufacturer, but before the final end use of the product. Example, printers off cuts and trimmings.
Post-Consumer Material	Materials or items generated by households and commercial and institutional facilities, which have served their intended purpose and can no longer be used.
Post-Use Material	Materials generated by industry, commercial and institutional facilities, and households, which have served their intended purpose and can no longer be used. This does not include the in-plant utilization of materials such as re-work, re-grind, re-pulp and scrap materials, generated within the plant and capable of being re-used within the process that generated it.
Post-Consumer Recycled Content	Material recovered from a consumer product at the end of its life, diverted from waste destined for disposal.
Post-Industrial Recycled Content	Material generated in manufacturing and converting processes, recovered or diverted from solid waste.
Reclaimed	Useful products recovered from waste materials.
Recommissioned	Put back in service or use after having been previously decommissioned.
Recyclable	Products made from materials, which after use can be diverted from the waste stream and recycled into a new product. A product or package may be deemed recyclable where at least 33 percent of the population across Canada has collection or drop-off facilities for recycling for that product, or when a product is produced for a regional market, where 33 percent of the population has access to convenient collection or drop-off facilities for recycling.

WORKSHEET #5: GREEN TERMS

Term	Definition
Recycled	The content in a material or product has been partially or fully derived from recycled materials versus virgin materials. See Post-consumer recycled content
Refurbished	Items that were returned to retailers and manufacturers due to blemish and/or functionality issues. The items are then repaired, either by the manufacturer or a reseller company, and resold to customers with a discount.
Reprocessed Manufacturing Scrap	Material generated as a result of the manufacturing process which is re-used by the same generator.
Re-Refining	The use of refining processes during recycling to produce high quality base stock for lubricants or other petroleum products. Re-refining may include distillation, hydro-treating, and/or treatments employing acid, caustic, solvent, clay and/or other chemicals.
Renewable Energy	Energy that comes from resources which are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves and geothermal heat.
Renewable Resource	A natural resource which can replenish with the passage of time, either through biological reproduction or other naturally recurring processes.
Request for Proposal (RFP)	Solicitation through a formal bidding process to potential suppliers to submit business proposals. Includes preliminary requirements for the good or service and usually follows a structured evaluation and selection procedure.
Request for Tender (RFT)	Formal, structured invitation to suppliers to bid, supply products or services for a defined need.
Reuse	The direct reapplication of a product/package for the same or different purpose, in its original form.
Sustainability	Sustainability is the quest for more sustainable, productive and resilient ecological, economic, political and cultural systems that can persist over generations without destroying the social and life supporting systems that current and future generations of humans (and all other species on earth) depend on.
Sustainable Development	Sustainable development is growth that makes use of our earth's resources without impairing the ability of future generations to enjoy life on this planet.

WORKSHEET #5: GREEN TERMS

Term	Definition
Sustainable Procurement	Sustainable procurement is a process whereby organizations meet their needs for goods, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment.
Total Cost of Ownership	A financial estimate intended to help buyers and owners determine the direct and indirect costs of a product or service, including the total cost of acquisition, operations, maintenance and disposal.
Value for Money	A utility derived from every purchase or every sum of money spent. Value for money is based not only on the minimum purchase price but also on the maximum efficiency and effectiveness of the purchase.
Volatile Organic Compound (VOC)	A group of organic compounds that evaporate easily and contribute to air pollution, mainly through the formation of secondary pollutants.

Sources: Responsible Purchasing Network, Whistler 2020 Sustainable Purchasing Guide

How to Put Green Into the Procurement of Buildings and Construction

Is LED Lighting that Expensive? Not in the Long Run!

Replacing older T12 or T8 fluorescent lamps or fixtures with LEDs will significantly improve lighting quality, lighting levels and energy efficiency, but also reduce operations and maintenance costs due to their longer life span (50,000 hours). Savings are even better for high-bay, warehouse and exterior applications where lifts and site safety costs are higher for lamp replacements.



Introduction

We spend most of our time living and working in buildings. We must design and construct our buildings and infrastructure in a way that creates healthy indoor environments, maximizes our investment and optimizes our total cost of ownership. Procurement decisions that integrate environmental considerations into new buildings and retrofits can help government:

- » [Design and operate energy efficient buildings](#) and reduce GHG emissions.
- » [Create healthy, clean workplaces](#) for its employees and the public.
- » [Sustainably manage](#) energy, water and natural resources.
- » [Use materials efficiently](#) to reduce waste during construction.
- » [Reduce impacts](#) on land use and traffic during construction.
- » [Meet its objectives](#) for improving energy conservation and efficiency¹, addressing climate change² and the diverting waste from landfills.
- » [Adapt to the impacts of climate change](#) by choosing locations that are more resilient.

This section provides guidance on how to integrate green into new buildings and retrofits and achieve value for money from capital investments. For guidance on new buildings, major renovations and/or extensions to existing buildings see the [Build Better Buildings Implementation Guide](#)³.

Green Procurement Approaches for New Buildings and Retrofits

The design and construction of new buildings and retrofits are at times a complex combination of decision-making and procurement methods. Individual material, component or systems decisions cannot be made in isolation because they can affect the overall performance of the building or infrastructure, e.g. energy, water, waste, air quality. Green procurement approaches in building and construction projects aim to address both the overall impact of the project and the environmental characteristics of individual products, components or systems being specified.

¹ [Moving Forward—Energy Efficiency Action Plan 2011](#)

² [Charting our Course—Climate Change Action Plan 2011](#)
[Turn Back the Tide](#)

APPENDIX A: APPROACHES

Town of Pasadena and Municipal and Intergovernmental Affairs Go Green and Save Money with Polished Concrete Floors

The Town of Pasadena's new Health and Wellness Centre will use a low maintenance polished concrete floor in the lobby areas. Requiring only weekly soapy water cleaning, the installation cost of concrete floors is between \$2-\$6 per square foot making it a competitive and greener alternative to tile, resilient flooring and carpet. The lustrous sheen, tonal differences, subtle cracks and aggregates take on a stone-like, natural feel that is unique to the building. A polished concrete floor properly maintained is expected to last a hundred years or more.

Source: Department of Municipal and Intergovernmental Affairs, Government of Newfoundland and Labrador

Depending on the size and complexity of the project, a range of different procurement approaches can be used (often in combination):

- » Specify minimum energy performance targets or savings for an energy efficient new building or retrofit including lighting, HVAC or controls improvement or retrofit.
- » Restrict the use of toxic or hazardous substances in building materials.
- » Specify the use of sustainably sourced timber and other natural materials, recycled and reused materials and the recyclability of materials at their end-of-life.
- » Give importance to indoor air quality, low VOCs, occupant wellbeing and adequate ventilation.
- » Require the use of water-saving fixtures, encourage the reuse of grey water and rainwater and storm water management design.
- » Use reference standards such as [ASHRAE 90.1](#), [LEED Silver](#) or [National Energy Code of Canada for Buildings](#) to determine best practices and possible specifications.
- » Include contract clauses related to construction waste management to minimize waste going to landfill.
- » Include performance based incentives in contracts for deep energy retrofits.
- » Include commissioning, measurement and verification for training users as part of retrofits or new building projects.
- » Include selection criteria for consultants, architects or engineers on experience in green building or retrofits.
- » Include selection criteria for contractors in applying appropriate environmental management measures such as pollution prevention or sediment run-off control.

These approaches may be a part of achieving a green building certification such as BOMA BEST, LEED. Pursuit of these certifications can not only achieve higher levels of building environmental performance but is also intended to improve operating and management practices.

Natural Resources Gains BOMA BEST Certification

In May 2011, the Natural Resources Building in St. John's achieved BOMA BEST Level 3 certification. The Department of Transportation and Works received an award from BOMA Newfoundland and Labrador for achieving the highest level of certification of any building in the province that year.

Source: Department of Transportation and Works, Government of Newfoundland and Labrador

Importance of Early Decision Making

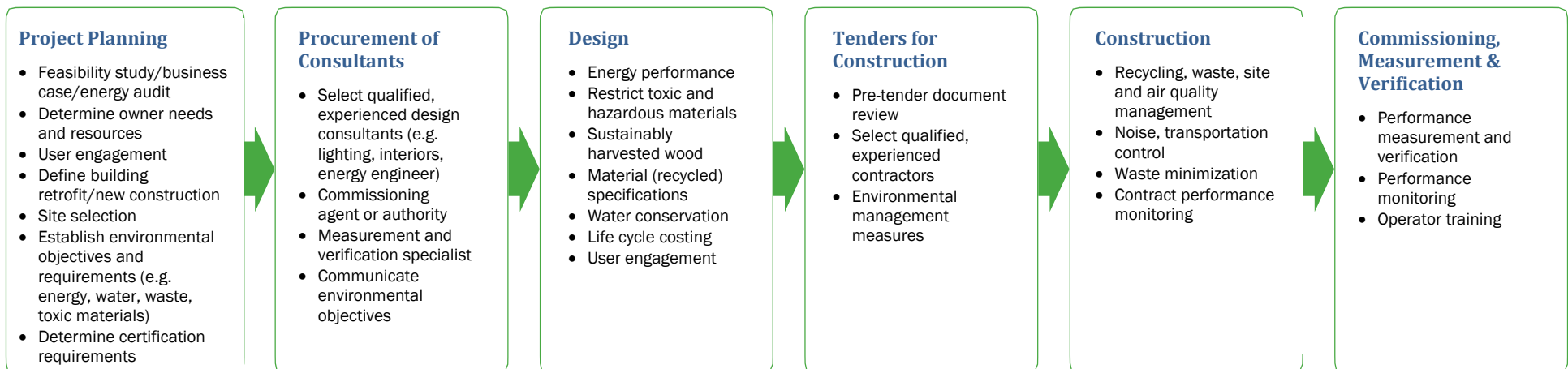
Since buildings have a substantial functional lifecycle, proper procurement, design and construction decisions are essential to achieve optimum total cost of ownership, minimize future costs of rework or change orders and optimum environmental performance. As the 'Project Life Cycle' table below illustrates, the earliest design decisions are the ones that have the greatest potential for environmental performance improvement and largely determine future total cost of ownership. The later design decisions are made, the more costly the changes become to implement and the more waste is potentially created through physical rework, additional materials, components or systems.

Project Life Cycle

	Concept and Feasibility	Design	Construction
Potential for Environmental Performance Improvement	High	Medium	Low
Cost of Change	Low	Medium	High

This makes the achievement of environmental performance objectives both a complex and demanding task that has opportunities and implications for procurement decisions across all stages of the project life cycle (see Figure 1 below).

Figure 1. Life Cycle Stages of a Building Project



A Green Procurement Checklist for buildings and construction works is provided in the worksheets at the end of Appendix A. The following sections provide additional detail that can support buyers in integrating green considerations into the procurement process.

APPENDIX A: APPROACHES

St. Anthony Polar Centre — Multi-Use Recreation Facility Improves Energy Efficiency

During design of the St. Anthony Polar Centre, enhancements upon typical 'base' model arenas were made to the refrigeration plant, ventilation and heating systems, electrical system and architectural design. Through smart engineering and architecture, the extra cost of the enhancements have a forecasted payback of approximately 12 years and are saving the Center 10 percent annual energy and GHG emissions.

Source: Department of Municipal and Intergovernmental Affairs, Government of Newfoundland and Labrador

Where Do I Start? The Title of the Contract!

Start with the title. If the environmental specification/requirement is a significant component of the overall terms of reference for new buildings and building retrofits/improvements, or perhaps is of high importance to the department, the title of the contract should clearly state this requirement. For example, appropriate titles for tenders or RFPs that will supply environmentally preferable solutions include:

- » “Supply of low VOC architectural coatings.”
- » “Tender for the supply of energy efficient lighting.”
- » “Supply of sustainably harvested lumber.”

Note: The title cannot include the name of any third party environmental/ecologo/certification/industry standard or other words that may be discriminatory to vendors (e.g. geographic criteria).

Assessing Your Needs and Requirements

A crucial step before starting the procurement process is to assess your needs in light of the potential environmental impact of the building or construction project. Proper feasibility, energy audits and business case development should involve end users to reveal and verify needs (more efficient lighting, enhanced air quality, improved ventilation, control of heating, repair or replacement of materials, components or systems). Departments should thoroughly determine their needs and requirements in order to ensure environmentally conscious decisions are integrated from the start and throughout the procurement process. The various needs and requirements can range from an improvement in energy performance, lighting levels, air quality, ventilation, envelope, water conservation or a life cycle replacement, etc.

Why Consult with Users?

Even for simple building improvements such as lighting, project success often is determined by user acceptance. For example, prior agreement regarding the proper lighting level within a building space will set the parameters for implementing higher energy standards in a retrofit.

Identifying the Key Environmental Issues

Whether the new building or building improvement is small (T12 lamp replacement) or large (building a new school or hospital), it is important to take a “systems” approach to understanding the key environmental issues.

For example, retrofitting an office space with new lighting fixtures and lamps that are more efficient will also generate less heat. This, in turn, may require adjustments to the heating or cooling system depending on the season and how much heat the old inefficient lamps generated. The key environmental impacts of building and construction projects and the approaches on how they can be tackled are shown in the table below.

Impact/Issue	Approach
Consumption of energy for site selection, heating, cooling, ventilation, hot water and electricity and resulting CO ₂ emissions	<ul style="list-style-type: none"> • Ensure energy efficiency standards and targets are met or exceeded. • Ensure appropriate site selection and orientation. • Use performance based contracts for energy service companies. • Include commissioning and measurement and verification for larger projects.
Consumption of natural resources	<ul style="list-style-type: none"> • Encourage the use of sustainably harvested resources. • Encourage material efficiency in design. • Set waste diversion targets and ensure proper construction waste management.
Consumption of water for cooling and occupant use	<ul style="list-style-type: none"> • Encourage water efficiency standards and targets. • Specify water efficient fixtures.
Emissions of toxic substances during production or disposal of building materials leading to air and water pollution	<ul style="list-style-type: none"> • Encourage the use of: <ul style="list-style-type: none"> • Non-toxic building materials, furniture and fixtures. • A life cycle assessment for building materials.
Negative health impacts on contractors and building users due to building materials containing toxic substances	<ul style="list-style-type: none"> • Encourage the use of non-toxic building materials, furniture, fixtures, adhesives and finishes.

Where Can I Find Environmental Specifications?

There are many resources available for building owners, designers and architects to help them specify green building products, components and equipment including:

- The National Master Specification (NMS)
- Guide to Environmentally Responsible Specifications for New Construction and Renovation (Public Works Canada)
- The Whole Building Design Guide (US)
- The Federal Green Construction Guide for Specifiers (US EPA)

See [‘Additional Information’](#) in Appendix A for details.

Environmental Specifications

Once you have defined the need and requirements for the new building or improvement project, a set of environmental specifications have to be developed.

Specifications describe to vendors the nature of the contract as well as the measurable requirements against which tenders or RFPs can be evaluated. You can develop environmental specifications in terms of:

- i. **Environmental performance** used for a particular material, product, service or work.
- ii. **Material or production processes** used for a product, service or work.
- iii. **Performance of the end result** or output.

It is very important when developing environmental specifications that they are clear and transparent so that they can be understood by all vendors/suppliers and so that you can verify compliance when assessing tenders or proposals (see [‘Evaluation’](#) in Appendix A). This means that the environmental specifications will be clearly indicated in the tender or RFP documents. If the specifications are not clear and correct, they will inevitably lead to unsuitable bids/proposals from vendors.

I. Environmental Performance of a Material, Product, Service or Work

You can develop environmental specifications that relate to the characteristics of the product, material or service. This may include such things as energy-use, toxic or hazardous materials, pollutant emissions, or water use. This helps you clearly communicate what you are asking from vendors.

Often, technical standards, ecolabels or certifications used in building and construction can be included in your specification. When reference to a standard or certification is used (e.g. SFI, FSC, Greenguard, Floorscore and ECOLOGO), it must be accompanied by the words ‘or equivalent.’ This allows tenders based on equivalent standards or equivalent solutions not certified according to a specific standard to be considered by the buyer. To demonstrate equivalence, vendors should be permitted to use any form of evidence (such as a technical dossier or test report from a recognized body) but they must provide objective and authoritative evidence in support of any claims.

Using Ecolabels and Certifications

Ecolabels can be used in two different ways for developing environmental specifications:

1. Help in writing technical specifications to define the environmental characteristics of the goods or services you are purchasing; and
2. Help in verifying and validating compliance with the specifications, by accepting the label as one means of proof of compliance with the technical specifications.

Finally, ecolabels and certifications are a useful source for such information, as they are often based on scientific information and life-cycle assessment.

What is Energy Performance Contracting (EPC)?

An EPC is a contractual arrangement between a building owner or occupier and an Energy Service Company (ESCO) to improve the energy efficiency of a building. Investment costs are typically covered by the ESCO (or a third party such as a bank), so no financial outlay is required by the owner/occupier. The ESCO receives a fee, usually linked to guaranteed energy savings. After the specified contracting period, savings will revert to the owner/occupier. EPCs are often undertaken for a group of buildings in order to make the contracts more attractive to potential investors.

II. Material or Production Processes Used for a Product, Service or Work

What a building material/component or system is made of, how it is produced or how the construction work is performed, can form a significant part of its environmental impact. Materials and production methods can explicitly be taken into account when defining technical specifications. However, since all technical specifications should bare a link to the subject matter of the contract, you can only include those requirements which are related to the production of the building material/component or system being procured. You must ensure that the principles of non-discrimination, equal treatment and transparency are respected when specifying materials or production methods. You can:

- » Specify that what you are purchasing be made from a specific material, or contain a certain percentage of recycled or reused content (e.g. 30 percent recycled content in all structural steel).
- » Specify that it not contain chemical substances that are detrimental to the environment or health (e.g. cadmium, formaldehyde).
- » Specify that the material/component/system or construction work be delivered in a certain way (e.g. integrated road-rail, construction waste management).

Such specifications should be based on an objective risk assessment and strategic priorities of your organization.

III. Performance of the End Result or Output

You can also develop performance-based or functional specifications that describes the end result and which outputs (for example in terms of quality, quantity, or reliability) are expected, including how they will be measured (e.g. the building will achieve 15 percent below ASHRAE 90.1 (2010)). They do not prescribe the inputs or the way in which the vendor is to achieve the specified level of performance. The vendor is open to propose the most appropriate solution. A performance-based approach usually allows more scope for creativity and in some cases will challenge vendors into developing innovative technical solutions.

When using performance based specifications, think carefully about how you will assess and compare proposals in a fair and transparent way. You may ask the tenderer to indicate how the desired result will be achieved and meet the level of quality specified. Because of this, performance-based specifications are better suited for RFPs rather than tenders. In the above example, you could ask vendors to describe how they would obtain the 15 percent below ASHRAE 90.1 (2010) and provide some technical data to confirm the feasibility of their proposed methods. If using performance-based specifications, you will also need to consider how they will be incorporated into contractual clauses ([‘Contract Performance and Monitoring’](#) in Appendix A).

Requirements for Consultants and Vendors

You can also develop requirements related to the capability or management practices vendors are required to perform as a service (e.g. design, engineering).

Exclusion of Vendors

A department has the right to exclude vendors by taking into account how their past behaviour or conduct has affected the environment. This is usually written in two forms into mandatory requirements in tenders or RFPs:

- » Having no environmental infractions, liens, lawsuits or convictions pending due to their environmental management activities.
- » Having no infractions, liens, lawsuits or convictions pending due to their professional conduct.

Technical Capability

A critical success factor for building and construction projects is the quality of the consultants required, such as designers, engineers, contractors and supervisors need to have relevant knowledge, experience, skills, and references. The project requirements can help inform the criteria to use in procuring consultants throughout the project life cycle—from business case development, feasibility studies to the architect, engineer or lighting designer and general contractor. Specific technical capabilities you may ask from vendors can be:

- » Does the company employ or have access to personnel with the relevant knowledge, experience, skills, educational and professional qualifications to address the environmental requirements of the contract (e.g. LEED AP BD+C, P.Eng., CEM, IES, etc)?
- » Does the company own or have access to the necessary technical equipment for environmental protection (e.g. asbestos removal equipment or construction waste diversion, spillage control, minimizing natural habitat disruption)?
- » Does the company have the means to ensure the quality of the environmental performance aspects of the contract (e.g. access to relevant technical bodies, methods such as energy modelling, life cycle costing, integrated design process)?
- » Does the company have demonstrated experience in at least three projects of similar scope, size and budget (supported by client references)?
- » Can the company identify the key environmental risks and opportunities for the project and show how they should be managed (e.g. storm water management)?

What is Energy Performance? Hopedale Community Hall — Targeting Green in a Harsh Climate

This new community hall in Labrador will be built sustainably with:

- 80 percent un-vegetated open space provided (no hard landscaping)
- 33 percent above Model National Energy Code for Buildings (1997) energy consumption and cost savings
- 32 percent water use reduction
- 20 percent recycled content targeted for building materials
- 100 percent use of low VOC products

Source: Department of Municipal and Intergovernmental Affairs, Government of Newfoundland and Labrador



Environmental Management

For new buildings or building improvement contracts you can ask about the environmental management measures that the company will be able to apply in performing the contract. You can only ask for this when the company's management practices are related to the subject matter of the contract.

For example, you can ask that vendors demonstrate their technical capacity (either by having the expertise within the company or by co-operation with experts) to put in place environmental management measures that meet the following requirements:

- » Ensuring effective protection of fauna and flora in the building/construction area and its surroundings (where construction takes place in an environmentally sensitive area);
- » Measures to prevent any harmful waste, toxic or hazardous substance flows that may adversely impact air quality, soil or watersheds;
- » Environmental management measures aimed at minimizing construction waste, respecting noise regulations and avoiding traffic congestion.

One means of demonstrating the vendor's ability to apply such measures is certification under an environmental management system (EMS) such as ISO 14001. Setting a requirement for an environmental management system is best suited where high environmental risks or impacts are also present with a high value contract (e.g. roads, bridges, large buildings, infrastructure, and private public partnerships). Other means of evidence provided by the company that can prove the required technical capacity should also be accepted. Just requesting the presence of third party certification/registration to ISO 14001 or equivalent may not be sufficient. Ideally the significant impacts and risks identified by the vendor through the EMS will be related to the subject matter of the contract and their work or services.

What is an Environmental Management System?

An environmental management system (EMS) is aimed at improving the overall environmental performance of the organization. It allows vendors to understand their most significant environmental impacts and associated risks, and help them manage and continuously improve their environmental performance. Organizations can develop their own EMS or have ISO 14001 registered.

Did you know? Federal Government Goes Green.

The federal government has a green procurement policy and already taken significant action to reduce its environmental footprint. For example, all new government office buildings are required to meet the Canada Green Building Council's Leadership in Energy and Environmental Design (LEED—Canada) Gold level.

Evaluation

Environmental Award Criteria

Consideration should be given to whether an environmental characteristic should be a minimum requirement (specification) or considered a criteria worthy of evaluation (such as in an RFP). By including environmental criteria into your evaluation, you are able to weigh them against other factors including cost, quality, etc.

In tenders, you should set a minimum level of performance in the technical specifications, and then evaluate on price. In RFPs, you can set minimum levels of performance in the technical specifications and then allocate extra points for even better performance to be evaluated.

This may be particularly useful when the environmental performance or impacts of the project are significant or have implications on life cycle cost and value for money.

To determine an appropriate weighting for environmental criteria in RFPs, you should consider:

- » **How important the environmental objectives** are for the contract, relative to other considerations (e.g. cost, quality).
- » **To what extent these considerations are best addressed in award criteria**, either in addition to, or instead of, in specifications and contract performance clauses.
- » **How many points/marks you can allocate to environment**. This depends on the product/service and the market conditions. For example, if you anticipate low variations on price, but high variability for environmental performance from vendors, it makes sense to allocate more points to evaluate environmental characteristics.

Using Ecolabels

The environmental criteria underlying ecolabels, which refer to the environmental characteristics of the product or work, may also be used to help draft and assess award criteria. You can use some ecolabel criteria as a minimum requirement in the specifications. Then award additional points during evaluation that meet more of the relevant criteria included in ecolabels. Note that when using ecolabel criteria to set specifications, you can allow that ecolabel to be used as proof of meeting the requirement, but you must also consider and accept “equivalents” as evidence of meeting the underlying criteria. See [‘The World Of Environmental Performance Labels—Reference Sheet’](#) in Section 3 for more information on ecolabels.

Using Environmental Management Systems

In some cases an environmental management system (EMS) may also serve as evidence during evaluation. At award stage, you can also assess how a contract will be performed, and therefore the vendor's approach to carry out certain measures in accordance with an EMS may be relevant. However, you should not duplicate any requirement for an EMS you may have placed as a minimum requirement.

Contract Performance and Monitoring

Environmental considerations can be included in contract performance clauses that prescribe how a contract is to be carried out. Note that departments may exclude vendors who do not agree to the contractual clauses. However, there are some guiding principles that should be followed:

- » **Contract clauses should be linked to the performance of the contract** (i.e. the tasks necessary for construction of new building or retrofit being purchased).
- » **Compliance with the contractual clauses should only be monitored** during the execution of the contract (e.g. meeting construction waste diversion or recycling targets through spot auditing of collection reports).
- » **Contract clauses may include the specific commitments**, which have been made part of the procurement process (e.g. enforcing compliance with sedimentation or soil erosion controls claimed in the bid or proposal).
- » **Contract clauses must be set out clearly** in the tender or RFP to ensure companies are aware of all their obligations and can price their bids/proposal accordingly.

Examples of possible contract performance clauses for buildings and construction works:

- » **How the work is performed:**
 - Application of specific environmental management measures (see '[Requirements for Consultants and Vendors](#)' in Appendix A).
 - Minimization of waste associated with the contract (e.g. waste diversion targets).
 - Efficient use of resources such as electricity and water on site (e.g. site lighting follows the work schedule).
- » **Training of contractor staff:**
 - Require that vendor staff are trained in the environmental impact of their work and the environmental policy of the buyer's organization.
- » **Transport of materials, products and tools to the site:**
 - Require the use of reusable containers or packaging to transport materials or products (e.g. reusable pallets, shipping containers).
 - No idling of delivery vehicles on site during unloading.
- » **Disposal of used products or packaging:**
 - Require that all packaging be taken away for reuse, recycling or appropriate disposal by the contractor.

Monitoring Contract Compliance

Having environmental contract clauses is only effective if vendors/contractors are properly monitored. Monitoring can take several different forms:

- » **The vendor is requested to supply evidence of compliance.**
- » **The contracting authority/department may carry out spot checks.**
- » **The contracting authority hires a third party to monitor compliance.**

Note that appropriate penalties for non-compliance or bonuses for good performance should be included within the contract.

Additional Information

[National Master Specification \(NMS\) Guide to Environmentally Responsible Specifications for New Construction and Renovations](#), Public Works and Government Services Canada, 2000.

This guide provides case studies, specifications, environmental criteria and material selection information for engineers and designers.

[Public Works and Government Services Canada—Green Building Targets](#), Government of Canada.

The Federal Government has set targets to green its buildings across departments. Requirements include LEED Gold certification for all new construction and assessment against BOMA BEST or Green Globes for existing buildings as well as greenhouse gas emissions.

[Toronto Green Standard](#), City of Toronto.

The Toronto Green Standard (TGS) is a two-tier set of performance measures with supporting guidelines related to sustainable site and building design for new private and public development.

[Federal Green Construction Guide for Specifiers](#), US EPA, 2010.

This zip file contains detailed templates and sample language, clauses across all areas of capital project procurement from consultant qualifications, to storm water management to LEED.

[Whole Building Design Guide](#), National Institute of Building Sciences.

This guide provides significant resources to engineers and designers on how to take a whole building approach to design and construction.

The [Environmentally Responsible Construction and Renovation Handbook](#), Public Works and Government Services Canada, 2000.

This handbook provides details on strategies and methods for environmentally responsible construction and renovation.

The [Environmentally Responsible Green Office at a Glance](#), Public Works and Government Services Canada, 2000.

This guide provides information on how to green office space and building interiors including fixtures, furnishings, leasing and life cycle costing.

[LEED Green Building Rating System](#), Canada Green Building Council.

The rating system that is referenced in the Build Better Buildings Policy.

[Build Better Buildings Policy](#), Government of Newfoundland.

The policy applicable to all new buildings, major renovations/extensions receiving Provincial Government funding or built by Provincial Government corporations or agencies.

[Guide to Implementing the Build Better Buildings Policy](#), Government of Newfoundland.

A practical guide for new buildings and major renovations on how to meet and exceed the requirements of the Build Better Buildings Policy.

Resources

- [Moving Forward—Energy Efficiency Action Plan 2011](#)
- [Charting our Course—Climate Change Action Plan 2011](#)
- [Turn Back the Tide](#)
- Table adapted from [Guidelines for Sustainable Construction in Public Procurement](#). ICLEI Europe, 2006. Accessed: January 27, 2014.

Green Procurement Checklist

1: Needs Assessment and Planning

- a) Has the existing building material, component or system reached the end of its useful life? Yes No N/A
 Notes/Comment _____
- b) Have the key environmental impacts of the building material, component or system been identified? E.g. waste, energy, emissions, water, worker health, etc. Yes No N/A
 Notes/Comment _____
- c) Are the key environmental impacts a priority for the government/department? Yes No N/A
 Notes/Comment _____
- d) Has the optimum means of meeting the need been determined? e.g. leasing, ownership, refurbishment, new construction etc. Yes No N/A
 Notes/Comment _____
- e) Has the “total cost of ownership” been calculated for all alternatives that meet the need? Yes No N/A
 Notes/Comment _____

2: Market and Vendor Analysis

- a) Can vendors provide information on the key environmental impacts and risks of their proposed building project solution? Yes No N/A
 Notes/Comment _____
- b) If no to ‘a’, can the market/vendors supply an environmentally preferable alternative? Yes No N/A
 Notes/Comment _____
- c) Have all vendors been informed of government’s environmental priorities? E.g. energy efficiency, climate change, sustainable resources, etc. Yes No N/A
 Notes/Comment _____

Instructions

1. Where an opportunity exists for green procurement, this checklist should be used to integrate environmental factors into the procurement process of new buildings and retrofits.
2. Where questions cannot be answered, (yes, no, n/a), additional research, tasks or other actions should be identified.
3. Use this checklist as a guide only, specific procurement practices may or may not require all items.

Building Improvement or Construction Project

Contact and Company

Date Completed

APPENDIX A: CHECKLIST

- d) If the building/infrastructure uses energy during use, are more energy efficient alternatives available? Yes No N/A
Notes/Comment _____

3: Define Specifications

- a) Do the environmental specifications target the key environmental impacts? Yes No N/A
Notes/Comment _____
- b) Has a recognized, ecolabelling specification been used to establish the performance specification? Yes No N/A
Notes/Comment _____
- c) Have requirements related to the vendor been integrated into the specification?
e.g. environmental management system, free from env. fines, etc. Yes No N/A
Notes/Comment _____

4: Evaluation and Award Criteria

- a) Have all bidders been informed of the importance of the environmental factors in the award of the contract? Yes No N/A
Notes/Comment _____
- b) Have evaluation criteria and/or weighting been linked to the key environmental impacts? Yes No N/A
Notes/Comment _____
- c) Can any increased first cost be justified through lower total cost of ownership? Yes No N/A
Notes/Comment _____
- d) Have vendors identified any environmental or cost benefits not covered by the specification? Yes No N/A
Notes/Comment _____

5: Contract Performance

- a) Have contract clauses been linked to the performance of the contract? e.g. take-back requirements, off-peak delivery, etc. Yes No N/A
Notes/Comment _____
- b) Is there a verification procedure in place to ensure environmental specifications are being followed/fulfilled? Yes No N/A
Notes/Comment _____

Appliances

What are the key green issues?

- » **Energy Consumption:** The major life cycle impact of appliances, especially refrigerators, washers and dryers, dishwashers is not the design and manufacture of the product, but the energy (and, in some cases, water) consumed during its use.
- » **Resource Consumption:** Washing machines and dishwashers naturally use water for the cleaning process. If all U.S. households installed water-efficient appliances, the country would save more than 3 trillion gallons of water and more than \$18 billion dollars per year.
- » **Hazardous Substances:** Ozone depleting substances found in refrigerants, such as Chlorofluorocarbons (CFCs), also known as Freon, are used as coolants in older refrigerators, freezers and air conditioners in buildings and cars.
- » **Waste and End of Life:** Large appliances have long lives, typically 10 to 18 years. When the useful life of an appliance is over, the materials are still valuable, particularly the steel for scrap. Steel is the most abundant recyclable component in appliances. Many appliances are banned from landfills.

Myth Buster

While greener appliances that are highly energy efficient usually have a greater upfront cost, the ultimate energy savings over the life of the appliance more than offsets the extra initial cost.

Appliances include refrigerators, freezers, ovens, dishwashers, washing machines, dryers and combination washer dryers. They are commonly used in social housing, public administration offices and institutions. For example, fully equipped kitchens are often present in offices and in many public buildings such as schools, hospitals, and senior homes. Small appliances such as coffee machines, kettles and microwave ovens are not addressed in this product factsheet.



How do green appliances advance Government's strategic priorities?

✓ Reducing Energy Consumption and Resources




ENERGY STAR certified clothes washers use about 20 percent less energy and 35 percent less water than regular washers. They also have a greater tub capacity, which means you can wash fewer loads to clean the same amount of laundry. ENERGY STAR certified refrigerators use about 15 percent less energy than non-certified models. ENERGY STAR certified freezers are at least 10 percent more efficient than non-qualified models.

✓ Reducing Water Consumption and other Natural Resources

ENERGY STAR certified clothes washers use about 35 percent less water than regular washers. ENERGY STAR qualified dishwashers typically use one-third less water than non-qualified models in addition to saving energy. In state-of-the-art washing machines, sensors monitor the washing process to keep the use of energy, water and detergent to a minimum. Electronics control the washing process to achieve the best cleaning results with the lowest water and energy consumption.

✓ Reducing Unnecessary Waste and Recycling

The Refrigerant Management Canada (RMC) program is a voluntary industry-led extended producer responsibility (EPR) program across Canada to ensure the collection and environmentally sound destruction of ozone-depleting substances from commercial stationary refrigeration and air conditioning equipment that have reached their end-of-life. Some appliance dealers take appliances back. According to the US Environmental Protection Agency (EPA), using scrap instead of virgin materials — iron ore and coal — in making new steel reduces mining wastes by 97 percent, virgin materials use by 90 percent, air pollution by 76 percent, energy use by 74 percent and water use by 40 percent.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Appliances shall meet the ENERGY STAR standard for energy efficiency</p>	<p>The ENERGY STAR label makes it easy to identify the best energy performers on the market in order to contribute to the energy efficiency goals of the province. Energy Star is a widely recognized standard that is applicable to the complete range of standard household and common appliances.</p>	   <p>The ENERGY STAR ecolabel is the most common third-party standard for energy efficient appliances in Canada. The ENERGY STAR Most Efficient designation identifies and advances products in the marketplace in a number of categories and recognizes the most efficient products among those that qualify for the ENERGY STAR symbol</p> <p>The EnerGuide label is a tool that helps you determine how much energy it takes to operate the model, compare the energy use of similar models, and estimate annual operating costs. Check the Choosing and Using Appliances with EnerGuide by NRCan.</p>
<p>✓ Appliances shall not contain hazardous substances</p>	<p>Hazardous substances to avoid include: Ozone Depleting Substances Bromine Flame Retardants PVCs</p> <p>Ozone depleting substances found in refrigerants are restricted in Canada but are still found in refrigerants manufactured before 1993. Flame retardants and PVCs (found in plastics) off-gas into the atmosphere contributing to smog, asthma and other health and environmental issues.</p>	<p>Site inspection at contract initiation and spot inspections thereafter to ensure volumes meet the size of bins.</p>
<p>✓ Suppliers shall take back used appliances; ensure used components are responsibly recycled</p>	<p>This service is known as 'extended producer responsibility (EPR).' It ensures proper disposal and also reduces the government's waste management costs.</p>	<p>Check for Suppliers who have EPR programs and work within the provincial stewardship program to provide guarantee for recycling.</p>
<p>✓ Removal of all packaging and responsible recycling of it</p>	<p>Ensuring that suppliers take back all packaging upon delivery and guarantee that it will be responsibly recycled will reduce time and costs for recycling those materials for government.</p>	
<p>✓ Equipment that requires the use of water shall be designed to minimize water consumption</p>	<p>Washing machines, dishwashers, etc. can be designed to minimize water consumption. To save even more water, look for a dishwasher with a low water factor. The water factor (WF) is the number of litres of water per cycle that the washing machine uses per litre of tub capacity.</p>	<p>ENERGY STAR qualified washing machines must have a Water Factor (WF) of ≤ 0.8 L/cycle.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Appliances with sensing capabilities	<p>Washing machines with sensing technology to assess energy and water requirements based on load size will improve overall efficiencies.</p> <p>Soil sensors test how dirty dishes are throughout the wash and adjust the cycle to achieve optimum cleaning with minimum water and energy use.</p>	Check with suppliers if they offer this attribute.
ENERGY STAR front-loading washing machine	ENERGY STAR front-loading machines can cut water use by nearly 40 percent and electricity use up to 65 percent compared to a conventional top loader.	All suppliers today offer front-loading washing machines.
Designed to reduce operating noise	When sourcing sustainable appliances, organizations are specifying “low noise” design as a requirement to help improve health and safety issues related to noise.	Check with suppliers if they offer this attribute.
Reporting on carbon footprint	Appliance manufacturers are beginning to assess the carbon footprint of their products, which will give you another indicator for choosing a more environmentally preferable appliance.	Ask suppliers if they can deliver already or will in the near future report on the carbon footprint of their appliances.

Resources

- BC Hydro

IT Equipment

What are the key green issues?

- » **Energy Consumption:** Computers and other office electronics consume 74 billion kWh of electricity per year, equivalent to the annual electricity consumption of 7 million households. A typical desktop PC, with display, consumes about 150 watts, 10 times more than a laptop, and has limited power management features.
- » **Durability and Resource Use:** The organizational lifespan of a computer is about three years; users often feel it is easier to buy new equipment than to upgrade the products they have. Production and use of an ever-increasing number of electronic products is resource-intensive, accounting for significant extraction of natural resources and major energy consumption.
- » **Air Quality and Human Health:** Components of computers that contain ozone, volatile organic compounds, formaldehyde, and flame retardants can “off-gas” and impact air quality and human health.
- » **Waste and End of Life Management:** When computers and other electronics are disposed, the resulting waste stream contains toxic materials such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEs).

Myth Buster

People still believe that greener computers are more expensive. But in reality, they carry no price premium compared to conventional models while saving up to 60 percent in energy costs.

IT equipment includes all desktop computers and monitors, laptops, tablets, copiers, multifunctional devices, printers and fax machines, which are standard issue for almost all government employees and are used both in offices and in the field. Government and institutional buyers spend billions of dollars on electronic equipment each year.



How does green IT equipment advance Government's strategic priorities?

✓ Reducing Energy Consumption


Green computers that are ENERGY STAR rated are equipped with energy saving features that can reduce energy use by 40 percent to 65 percent. According to the EPA, if all office users in the US employed ENERGY STAR 5.0 power management features, the potential carbon dioxide reductions would be the equivalent of taking 3 million cars off the road and the potential energy cost savings would be \$2 billion. Buying laptops instead of desktop computers will reduce the energy used by up to 90 percent. Saving energy also means your equipment will run cooler, which can make it last longer and adds less unwanted heat to your office.

✓ Reducing Resource Consumption

Buying green computers from manufacturers who recycle or reuse components reduces the demand for virgin natural resources. Buying durable and upgradable computers increases their lifespan, reducing the frequency of replacement. According to the US Environmental Protection Agency (EPA), refurbishing a used computer is 25 times greener than recycling.

✓ Reducing Unnecessary Waste

Re-sale or redeployment of computers through surplus sales recycling programs will divert computers from landfills. Since 2013, The Electronic Products Recycling Association (EPRA) is operating a recycling program for end-of-life electronics, including computers and monitors in Newfoundland and Labrador that aims at helping to achieve a 50 percent goal of waste reduction in the province. Take back guarantees from suppliers for packaging materials will help reduce government waste. Many printing devices, including inkjet printers, fax machines and photocopiers have cartridges that are refillable and most are recyclable.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ IT equipment has at least EPEAT (Electronic Product Environmental Assessment Tool) silver level certification</p>	<p>The EPEAT system combines strict, comprehensive criteria for design, production, energy use and recycling with ongoing independent verification of manufacturer claims and thus contributes to continually reducing the negative environmental impacts of electronics.</p>	<p> EPEAT silver level rated products give you assurance, as a minimum, about a series of attributes, including compliance with the European RoHS directive (Restriction of Hazardous Substances) and with ENERGY STAR, reporting on the amount of mercury used in light sources, elimination of intentionally added flame retardants and plasticizers in certain applications, percentage of postconsumer recycled plastic content, of renewable/bio-based plastic materials content, provision of product take-back service, and of rechargeable battery take-back service, reduction/elimination of intentionally added toxics in packaging, percentage of recycled content in packaging, availability of additional three year warranty or service agreement.</p>
<p>✓ Buy laptops instead of desktop computers</p>	<p>The potential energy savings from substituting PCs with portable laptops are large, up to 90 percent or more.</p>	<p>The ENERGY STAR® symbol identifies the most energy efficient models.</p>
<p>✓ Take back guarantee of packaging</p>	<p>Ensuring that suppliers take back packaging materials upon delivery will reduce government waste.</p>	<p>Ask your supplier for a take back guarantee of packaging materials, such as cardboard and polystyrene.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Green Delivery Strategies	Consolidating product delivery schedules to reduce transportation, using proper route planning, avoiding idling of vehicles during product delivery and using re-usable blankets to protect items during shipping will all contribute to provincial commitments to minimize greenhouse gas emissions and solid waste production.	Engage the vendor on green delivery strategies and ask for a declaration of commitment.
Buy EPEAT Gold level certified computers, laptops and displays	After achieving a substantive penetration rate of EPEAT Silver level certified IT equipment, consider progressing to gold level, the highest achievable level of certification.	

Resources

- Responsible Purchasing Network (RPN)
- RPN Purchasing Guide Computers
- BC Hydro Powersmart
- US Environmental Protection Agency (EPA)
- Multi Materials Stewardship Board (MMSB)

Copy Paper

Copy paper is a type of fine paper used for copying and office printing with laser and inkjet printers and typically comes in standard sizes of letter, legal, and ledger/tabloid. It is one of the most commonly used office products, and the average North American office worker uses about 10,000 sheets of paper each year. The common weight of copy paper, called basis weight, is 20 lb. for 500 sheets, and the standard degree of paper brightness is 92.



What are the key green issues?

- » **Energy Consumption:** The production of one tonne of paper made of virgin tree fibre uses 12,564 kWh, which is only a little more than the amount of energy used by an average Canadian household in a year. Paper manufacturing is the 3rd largest user of fossil fuels worldwide.
- » **Waste:** Paper accounts for 1/3 of all the waste in Canada. 45 percent of the paper printed in offices ends up in the garbage bin by the end of the day.
- » **Resource Consumption and GHG Emissions:** 50 percent of the trees that are cut down go to making paper. Nearly 4 billion trees or 35 percent of the total trees cut around the world are used for paper production. Approximately 324 litres of water is used to produce 1 kg of paper.
- » **Pollutants and Toxins:** Conventional copy paper is bleached using chlorine, which can result in harmful chemicals such as dioxins and furans, known to cause cancer in humans. 228 million pounds of toxic chemicals are released into the environment each year from the production of office paper.

How does green copy paper advance Government's strategic priorities?

✓ Reducing Carbon Emissions and Air Pollutants

By using recycled paper, the amount of GHG emissions associated with harvesting of trees is reduced. By using 30 percent post consumer waste (PCW) recycled paper, over 10 percent of total GHG emissions over the whole paper life cycle from the harvesting of wood to paper disposal are saved. Using 100 percent PCW recycled paper reduces total GHG emissions by 38 percent.

Additionally, each tree removes one metric tonne of carbon dioxide from the atmosphere per year.

✓ Reducing Resource Consumption

Recycled paper saves trees, water and energy consumed through the manufacturing of non-recycled paper products (e.g. one metric tonne of recycled paper saves about 19 trees, 29,000 litres of water, 175 litres of oil, and 4,500 kilowatt hours of electricity).

✓ Reducing Unnecessary Waste

Although a significant amount of paper products are recycled in Canada, these items still make up about 34 percent of solid waste in our landfills — requesting or purchasing recycled paper will promote markets for secondary materials in alignment with the objectives of the Multi-Material Stewardship Board (MMSB).

✓ Improving Water Quality

Unbleached paper diminishes or eliminates the use of chlorine, which then reduces potential hazards from the manufacturing and handling of chemicals, emissions during production, and effluent afterwards.

Myth Buster

Today, recycled copy paper is of equal quality to non-recycled paper and works well in printers and copiers.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Copy paper shall be made of at least 30 percent post consumer waste (PCW) recycled content</p>	<p>Paper with a 30 percent recycled content rate is a minimum recommendation because it will foster progress on saving resources, energy and emissions. It is also readily available in the market place, and there are commonly recognized labels in use to verify these claims.</p>	<p>Paper is certified by one of the following two internationally recognized environmental certifications:</p> <p>ECOLOGO™: gives you assurance that paper has been thoroughly evaluated for its lifecycle environmental impacts, including an efficient use of fibre through the use of recycled content, lower solid waste volumes, and a reduced amount of energy use.</p> <p>Green Seal: gives you assurance on performance requirements and environmental health requirements such as recovered and post-consumer material, reduced chlorinated bleaching, and reduced toxicity in packaging.</p>
<p>✓ Copy paper must be sourced from sustainably harvested wood</p>	<p>Sustainable forest management addresses key environmental forest values — from water quality and biodiversity to harvesting and regeneration.</p>	<p>Paper is certified by one of the following internationally recognized forest certifications, which gives you assurance about the environmentally friendly management of forests as a source for paper.</p> <p>Forest Stewardship Council (FSC) Sustainable Forestry Initiative (SFI) Canadian Standards Association (CSA) Group Sustainable Forest Management System (SFM) standard</p>
<p>✓ Paper is process-chlorine free (PCF)</p>	<p>It is a safer way to whiten paper as it contains recycled content produced without elemental chlorine or chlorine derivatives, although one or more fibre components may have originally been bleached with chlorine or chlorine derivatives.</p>	<p>Paper is certified with the PCF {Processed Chlorine Free} Trademarks by Chlorine Free Products Association. This assures you that it has been manufactured free of chlorine chemistry.</p>
<p>✓ Cartons and corrugated packaging materials must be made of at least 30 percent PCW content</p>	<p>Recyclable packaging reduces the amount of waste, toxics, energy and GHG emissions.</p>	<p>Paper-based packaging is certified by one of the following two internationally recognized environmental certifications:</p> <p>ECOLOGO™ Green Seal</p>
<p>✓ Consolidate product delivery</p>	<p>By consolidating the product delivery schedule, e.g. from every day to once a week with an optimized route plan, fuel emissions can be reduced.</p>	<p>Engage the supplier and ask for a consolidated delivery schedule.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Copy paper made of 50 percent – 100 percent post consumer waste (PCW) recycled content</p>	<p>Copy paper at these levels of PWC will save more resources, energy and emissions. However, at these levels we start to see some price increases.</p>	<p>Paper is certified by one of these environmental certifications: ECOLOGO™ Forest Stewardship Council (FSC) Sustainable Forestry Initiative (SFI) Green Seal</p>
<p>Made from alternative fibres</p>	<p>Non-wood fibres such as wheat straw, bamboo grass, and hemp are rapidly renewable resources that can contribute to more environmentally sound fibre blends.</p> <p>E.g. copy paper made with 80 percent wheat straw waste and 20 percent FSC certified wood fibre is one of the most environmentally sustainable paper types currently available in North America, using less energy and producing less GHG emissions over its lifecycle than conventional non- and recycled wood fibre based paper. By using these wood substitutes, the number of trees harvested for paper every year can be significantly reduced.</p>	<p>Ask your supplier for non-wood paper alternatives.</p>
<p>Lowest basis weight</p>	<p>The heavier the paper, the more resources are consumed and the more expensive it is. By selecting a lighter weight paper the cost to the environment will be reduced, as will the purchasing price.</p> <p>The basis weight of paper is the designated fixed weight of 500 sheets measured in pounds and sheet size. Standard basis weight is 20 lbs. Avoid using heavier paper and if possible, source paper lighter than 20 lbs.</p>	<p>Basis weight is always specified. Ask your supplier for lighter alternatives.</p>

Resources

- American Forest and Paper Association
- Environment Canada
- [Xerox Study](#)
- www.ecology.com/2011/09/10/paper-chase
- Environment Canada
- Research Report: Comparative Life Cycle Study of Step Forward Paper™
- www.readyrecycles.com/recyclingfacts.htm

Interior Lighting

Interior lighting covers a wide range of lamps, fixtures and lighting controls installed inside buildings. Lighting is required in almost any interior space to supplement light coming from windows, skylights or doorways. Different types of interior lighting are required in offices, meeting rooms, washrooms, cafeterias, warehouses, storage rooms and garages. This factsheet does not cover coloured lighting, displays, emergency escape lighting and exterior lighting of any type.



What are the key green issues?

- » **Energy Consumption:** Lighting accounts for approximately 11 percent of energy use in institutional and commercial buildings in Canada. Next to space heating and cooling, lighting is often the most energy intense component of a building's operations. A 6-8 watt LED lamp has the same lumen output as a 60-watt incandescent bulb or a 13-15 watt compact fluorescent.
- » **Resource Consumption:** Lamps and fixtures are often constructed using steel, aluminum, glass, copper and plastics. Each requires energy, water and other resources in their production. However, at the end-of-life, these materials are still valuable, particularly the steel and aluminum. Other recyclable materials include metals like aluminum and copper, and plastics.
- » **Climate Change, GHG Emissions and Air Pollutants:** Power generation is Newfoundland and Labrador's third largest source of GHG emissions behind transportation and large industry. Energy efficient lighting in buildings can play a role in reducing these emissions and climate change as well as improving local air quality.
- » **Hazardous and Non-Hazardous Waste:** Older T12 fluorescent lamps and ballasts contain mercury and are considered hazardous waste upon their removal from a building. Waste lamps, whether broken or intact, contribute about 1150 kg/yr of mercury to landfill.

How does energy efficient lighting advance Government's strategic priorities?

- ✓ **Reducing Climate Change, GHG Emissions and Air Pollutants**
By using more energy efficient lamps and fixtures, the amount of GHG emissions and air pollutants associated with electrical power generation is significantly reduced.
- ✓ **Improved Indoor Environments**
Lighting upgrades and retrofits often improve the quality and illumination in the working environment. This improves the ability for staff and employees to perform their work and enhances job satisfaction, productivity and safety.
- ✓ **Reducing Hazardous Waste**
Using low mercury containing lamps and mercury free ballasts will reduce the end-of-life liability associated with these wastes. During upgrades or retrofits, these hazardous wastes can be captured and properly disposed of to avoid contamination of soil or ground water. LED lamps can last up to 50,000 hours significantly reducing the need to replace lamps and associated maintenance costs.

Myth Buster

Today, LED lighting is of equal or better colour quality and illumination than traditional incandescent or fluorescent lamps. They also last up to 20 times longer than incandescent lamps and six times longer than compact fluorescents.

FACTSHEET #4: INTERIOR LIGHTING

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Lighting design is to meet or exceed the national energy code for Buildings (NECB 2011) or ASHRAE 90.1 -2010 or LEED NC 2009 or LEEDv4</p>	<p>Ensure the best possible energy efficient design for new systems or retrofits of existing systems to reduce the cost of operations while providing quality indoor environments.</p>	<p>Including commissioning agent and measurement and verification specialist from the design phase through construction will ensure that all systems function and perform as planned. Successful LEED certification and supporting documentation for Energy and Atmosphere and Indoor Environmental Quality Credits.</p>
<p>✓ Specify low or no mercury containing lamps are used</p>	<p>Reducing the risk and liability of handling and disposing of mercury containing lamps and fixtures at end-of-life.</p>	<p>Request RoHS Compliant lamps from suppliers.</p>
<p>✓ Lighting consultants should demonstrate at least three years' experience in lighting design and/or have a suitable professional qualification in lighting engineering and design.</p>	<p>It is important to ensure a qualified consultant is procured to create a resource and energy efficient design of new lighting systems or renovation of an existing lighting system.</p>	<p>The vendor shall supply a list of the persons responsible for the project, including managerial staff, indicating educational and professional qualifications and relevant experience. This should include persons employed by subcontractors where the work is to be sub-contracted. The contractor shall also supply a list of lighting schemes the tenderer has designed over the last three years as well as past client contact information.</p>
<p>✓ Contractors shall dispose of all old fixtures, ballasts and lamps in compliance with applicable solid and/or hazardous waste regulations</p>	<p>Reduces environmental risks associated with mercury and other pollutant emissions to soil, water and air.</p>	<p>Request supplier to provide proof of transfer to a licensed handler of hazardous waste.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Require lighting engineer, designer or contractors to conduct life cycle cost assessment</p>	<p>Such an assessment should include the initial cost of the installation, its estimated lifetime, replacement costs of lamps and their estimated life, and energy cost of the lighting over its lifetime. The contracting authority will need to define its electricity price and the rate at which this increases, and its interest rate on investments.</p>	<p>Provide standard calculation template to vendor and electricity price, rate increase and the government's standard discount rate. See Life Cycle Cost Calculation for Light Sources.</p>
<p>Environmentally preferable packaging should be used</p> <ul style="list-style-type: none"> • Laminates and composite plastics shall not be used • Cardboard and corrugated paper boxes shall be made of at least 50 percent post-consumer recycled material • Where plastic materials are used, they shall be made of at least 50 percent postconsumer recycled material 	<p>Recycled and post-consumer content in packaging will contribute to reduced use of resources and the diversion of waste from landfills.</p>	<p>Ask your vendor for proof of the recycled packaging content.</p>
<p>Contractors shall take back all packaging</p>	<p>Reduce on-site waste production and additional handling by employees and staff.</p>	<p>Conduct site inspection after lighting installation.</p>

Resources

- LEED NC 2009 Reference Guide, Canada Green Building Council. URL: www.cagbc.org
- National Energy Code for Buildings 2011. National Research Council. URL: www.nationalcodes.nrc.gc.ca/eng/necb/index.html
- [Build Better Buildings Implementation Guide](#)
- The Swedish Environmental Management Council's Procurement Criteria for Indoor Lighting Products, version 2.0, 18 January 2011. URL: www.msr.se/en/green_procurement/criteria/Office/Lighting-products
- Life Cycle Cost Calculation for Light Sources, Swedish Environmental Management Council.
- ASHRAE 90.1, ASHRAE. URL: www.ashrae.org/resources--publications/bookstore/standard-90-1
- Building Life Cycle Cost Programs, US Department of Energy, 2013. http://energy.gov/node/782456/information/download_blcc.htmlwww.msr.se

Janitorial Cleaning Supplies

Janitorial cleaning supplies include all-purpose hard surface cleaners, industrial cleaners, toilet bowl cleaners, floor cleaners/degreasers, dishwasher detergents, floor strippers, disinfectants, glass, carpet and upholstery cleaners and spot and stain removers. They are typically directly purchased and used by government personnel or purchased indirectly when government contractors clean government buildings, office spaces, public spaces, public schools, and hospitals.



What are the key green issues?

- » **Human Health and Safety:** Many cleaners contain toxic ingredients that after continuous exposure pose a health hazard to the janitorial workers and cleaning staff. These ingredients can include carcinogenic chemicals causing cancer, endocrine-disrupting chemicals interfering with hormone processes, toxins that can cause liver, kidney, respiratory, skin, nervous system or reproductive damage and sensitizers that can trigger serious allergic reactions after initial exposure.
- » **Water and Air Quality:** Cleaning detergents disposed into sewer systems can contaminate local freshwater supplies. As they are not removed from the waste stream by sewage treatment, their pollutants, such as phosphates, overload aquatic ecosystems with nutrients. That leads to algae blooming on the water's surface, blocking out sunlight and causing reduced plant growth below the surface, leading to decreased oxygen supplies in the water.
- » **Energy Use and Emissions:** In many cleaning products, petroleum based solvents, bleach and chlorine-based ingredients are used, which are mostly still produced by methods based on a high consumption of energy.

How do green janitorial cleaning supplies advance Government's strategic priorities?

✓ Improving Human Health and Safety

Reducing or even eliminating the use of toxic cleaning products creates a safer workplace for government staff and contractors by reducing the incidence of diseases, such as occupational asthma and cancer that are related to chemical exposure. In the case of public schools or hospitals, it can also affect students, patients and other people who would be exposed to toxins. Switching to green cleaners helps reduce the more than \$75 million a year U.S. institutions spend to address chemical-related custodial injuries.

✓ Reducing Emissions and Improving Air Quality

Concentrated green cleaning materials, which reduce the amount of cleaning supplies necessary, reduce transportation emissions and reduce the amount of toxins (Volatile Organic Compounds) released into the atmosphere.

✓ Reducing Energy and Natural Resource Use

By using cold water for diluting solutions, energy can be saved by avoiding the need to heat water — which is energy intensive. Using bio-based cleaners reduces the demand for petroleum-based ingredients.

✓ Improving Water Quality


Using non-toxic cleaning products stops environmental contaminants from going into aquatic and marine ecosystems. This is the most effective form of pollution prevention.

✓ Reducing Unnecessary Waste

Green cleaners have minimum and recyclable packaging. Using concentrated cleaners that can be diluted with cold water, reduces the amount of packaging and waste. Purchasing bulk supplies and refilling containers can further reduce waste.

Myth Buster


It is not true that all green cleaning solutions are of low quality and clean poorly. There are many quality green solutions on the market that create long lasting suds and clean effectively.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ All cleaning products used in cleaning services, by government staff or contractors, must be ECOLOGO or Green Seal certified and come with a complete list of chemical ingredients on their third party certified Material safety data sheet (MSDS)</p>	<p>Substituting conventional with green cleaners is one of the most effective ways to reduce or eliminate exposure to chemicals that pose environmental and human health risks. ECOLOGO and Green Seal have used the environmentalist approach to pollutant assessments and provide science-based environmental certification standards that are credible and help purchasers make responsible procurement choices.</p>	<div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Cleaner is certified by one of the following two internationally recognized environmental certifications, which give you assurance on performance (the cleaner must work), and restrictions on pollutants such as phosphates, endocrine disrupters, chelating agents etc., as well as reduced packaging, strict limits on aquatic toxicity and biodegradability is also part of the criteria.</p> <p>ECOLOGO™</p> <p>Green Seal</p> </div> </div>
<p>✓ Products shall not contain toxic chemicals: Volatile organic compounds (VOCs), ethylenediaminetetraacetic acid (EDTA), trisodium nitrilotriacetate (NTA), alkylphenol ethoxylate (APE), phosphates, chlorine, petro-chemicals, triclosan, 2-butoxyethanol, and powdered silica</p>	<p>Eliminating the most toxic chemicals from used cleaning supplies will reduce human health and environmental risks substantially.</p>	<p>ECOLOGO or Green Seal certified cleaners come with a Material Safety Data Sheet (MSDS), which lists all the chemical ingredients. Check the list yourself or require the supplier to verify that the toxic chemicals listed on the left are not contained in the cleaner.</p>
<p>✓ Packaging must be comprised of recycled-content and be recyclable or refillable. Concentrated formulas are preferable. Products for refillable bottles and pump sprays shall be delivered in bulk</p>	<p>This will reduce unnecessary waste as well as reduce materials used and carbon emissions from producing packaging materials.</p>	<p>Ensure with the supplier or cleaning service contractor that packaging is minimized, and that you use bulk and concentrated formula options whenever possible.</p>

Recommended	Why is it important?	How do I know I am getting it?
<p><input checked="" type="checkbox"/> Consolidate total number of cleaners</p>	<p>Reducing the total number of cleaners in use will reduce costs from a materials management perspective.</p>	<p>Ensure with the supplier or cleaning service contractor that the use of different cleaners is consolidated where possible.</p>
<p><input checked="" type="checkbox"/> Using better cleaning equipment</p>	<p>Using microfibre mops and cloths reduces the need for cleaning chemicals. Using high efficiency filtration vacuum cleaners reduces the dust generated by older vacuum technologies. High Efficiency Particulate Air (HEPA) Filtration Systems are up to 99.97 percent efficient in removing particles as small as 0.3 microns.</p>	<p>Ensure with the supplier to deliver better performing cleaning equipment such as microfibre mops, high efficiency filtration vacuum cleaners or High Efficiency Particulate Air (HEPA) Filtration Systems.</p>
<p><input checked="" type="checkbox"/> Clean by need rather than schedule</p>	<p>Cleaning only when there is a need will reduce consumption of water, energy and cleaning supplies and also potentially decrease cost.</p>	<p>For example, you could forgo scheduled floor stripping in favor of flexible timelines that allow floors to be stripped only when needed. This is encouraged by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standard for existing buildings.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

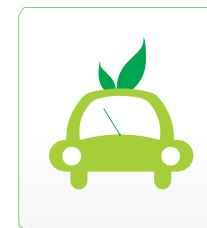
Recommended	Why is it important?	How do I know I am getting it?
<p>Bio-based cleaners</p>	<p>Bio-based solutions, e.g. made from citrus, seed, soybeans, corn, wheat cotton, vegetable and pine oils combine safe, natural ingredients and live microorganisms that produce digestive enzymes and convert dirt and grime into safe carbon dioxide and water. This evaporates, leaving the surface completely clean and free of chemical deposits (often the case when cleaning with chemical cleaners) simply by applying and wiping or scrubbing away. Bio-based active ingredients have less of an impact on the environment because they are able to biodegrade quickly without the release of harmful chemical byproducts.</p>	 <p>Ask your supplier for bio-based cleaners. The USDA BioPreferred® Program certification gives assurance that the USDA stands behind the accuracy of the claim that the product contains biological ingredients in the amounts stated on the label.</p>

Resources

- Prohibited toxic substances as listed in the Canadian Government's Accelerated Reduction or Elimination of Toxic Substance
- Responsible Purchasing Network (RPN) www.responsiblepurchasing.org
- Guide to Less Toxic Products

Light Duty Fleet Vehicles

Light duty fleet vehicles are any vehicles that are primarily used as a means of transportation for government personnel. These range from small compact sedans, over 2x4 pickups, up to full sized 4x4 pickups, SUVs, and vans. In 2010, there were about 1,030 light vehicles (not including ATVs and snowmobiles) operating in 14 government departments and in Newfoundland and Labrador.



What are the key green issues?

- » **Fuel and Resource Consumption:** The vehicle market is still dominated by traditional gasoline- and diesel-powered vehicles. The trend to bigger overall fleets and generally larger and more powerful vehicle sizes in the past decade has resulted in increased fuel consumption as well as increasing emissions.
- » **Air Quality and Human Health:** Gasoline vehicles are a significant source of air pollutants including carbon monoxide (CO), nitrogen oxides (NOx), non-methane organic compounds (NMOC), and particulate matter (PM) that cause smog and unhealthy air conditions.
- » **Greenhouse Gas (GHG) Emissions:** Gasoline vehicles are also a major source of the main global warming pollutant, carbon dioxide (CO₂). In 2009, road transportation accounted for 19 percent of Canada's total GHG emissions, contributing to global warming as well as to acid rain, which destroys forests and damages other ecosystems.
- » **Waste and End-of-Life:** The disposal of end-of-life vehicles can pose a threat to the environment, largely because of hazardous materials contained in end-of-life vehicles.

How do green light duty vehicles advance Government's strategic priorities?

✓ Reducing Resource Use

Environmentally preferable cars are designed to have high fuel economy, which is a key way to reduce total fleet fuel consumption and costs. A range of technologies, e.g. hybrid-electric vehicles (HEVs) or electric vehicles, and fuels (e.g., biodiesel, compressed natural gas, ethanol) are available and cost-competitive. The target of the Government of Newfoundland and Labrador in the 2011 Climate Change and Energy Efficiency Action Plans is that 35 percent of new car and SUV purchases would be hybrid or energy-efficient. Since April 2008, 43 percent of the Provincial Government's new car or SUV purchases have been hybrid vehicles.

✓ Reducing Emissions and Improving Air Quality

Environmentally preferable cars are also designed to have reduced carbon emissions and operate on alternative energy sources in order to reduce GHG emissions, smog and global warming. Alternative fuel vehicles improve air quality and demonstrate lower maintenance costs due to the cleaner-burning properties of their fuel. This also reduces human health issues such as asthma, respiratory diseases, cancer, heart disease, birth defects, and brain damage.

In addition, the emission of chemicals, such as nitrogen oxides, which contribute to acid rain destroying forests and other terrestrial and aquatic ecosystems, is reduced.

After seven years of driving, a fleet of twenty hybrid cars will emit 1.3 million pounds less carbon dioxide, 25,000 pounds less carbon monoxide, and 320 pounds less nitrogen oxides than a fleet of twenty full size sedans.


Electric cars that operate entirely on electricity burn no gasoline or diesel and produce no "tailpipe" greenhouse gas emissions or pollution. Life-cycle greenhouse gas emissions directly related to battery electric vehicles are lower than those produced by internal combustion engines.

✓ Reducing Unnecessary Waste and Recycling

Up to 75 percent of a vehicle's content by weight can be reused or recycled. Ensuring vehicle fluids (oil, lubricants, antifreeze, batteries) are collected, recycled, and/or properly disposed of is key to prevent hazardous materials from going into the waste stream and damaging the environment.

Myth Buster

While hybrid and electric vehicles used to be significantly more expensive, initial purchasing costs of hybrid and electric vehicles have become very similar to those of gasoline cars.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ New vehicles will belong to the three best-in-class models in terms of high fuel efficiency/economy and low emissions at the time of purchase</p>	<p>Fuel-economy varies significantly between the best-in-class and worst-in-class models, by vehicle class and engine type, even when considering only conventional gasoline vehicles. Choosing between the three best-in-class models ensures a significant reduction in fuel consumption and emissions.</p>	<p> EnerGuide helps identify the most fuel-efficient vehicles in a vehicle class.</p> <p>The California Air Resource Board (CARB) emission standard designates gasoline vehicles that have fewer emissions than vehicles sold under the US federal government's emissions standard.</p>
<p>✓ Appropriate vehicle size based on usage</p>	<p>Selecting the appropriate vehicle class and the smallest size vehicle class practical is a way to meet and not exceed operational requirements. Having “too much vehicle” for the job is not only a waste of resources, it can often have a negative impact on the environment. In cases where smaller vehicles are purchased, the fleet will usually save money, given that smaller vehicles are typically less expensive than larger vehicles.</p>	<p>The fleet manager should have the authority to analyze how vehicles are used and assign those that are the most appropriate for the task. Using a powerful pickup truck for a trip that does not require hauling large or heavy items is not energy efficient. Conduct a re-assessment of entitlement to a vehicle when an employee has a change of role (servicing now suburban areas instead of regional areas, doesn't need a 4WD anymore.)</p>
<p>✓ Alternative Fuels when it is cost-effective and operationally feasible</p>	<p>Replacing petroleum-based fuels with alternative and renewable fuels can, in many cases, reduce both greenhouse gases and toxic diesel emissions. Waste vegetable oil biodiesel is the lowest carbon-intense transportation fuel for diesel vehicles.</p>	<p>Choose alternative fuels such as biodiesel blends (B20 or higher), ethanol blends (E85 or higher), natural gas and/or electricity to the maximum extent possible and where available. Check the NRCAN site on Alternative Fuels for more information.</p>
<p>✓ Advanced technology, vehicles including hybrids and electric vehicles</p>	<p>Gas/electric hybrid vehicles and diesel/electric light-duty work trucks, as well as electric cars are greatly contributing to reducing energy consumption, emissions and costs. There are regulatory requirements for advanced technology vehicles such as electric vehicles and plug-in hybrids for model years 2011 to 2016.</p>	<p>Check the NRCAN vehicle tables to determine the fuel consumption ratings of Advanced Technology Vehicles (plug-in hybrid electric and electric vehicles) for different model years.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Fuel Consumption and Vehicle Use Tracking	Collecting and reporting fuel and vehicle/equipment use data is key to understanding fleet efficiency. The right data management system for each fleet depends primarily on fleet size, annual miles travelled and resources available to each fleet.	Ensure that your fleet management program contains appropriate systems to track fuel consumption and vehicle use. For small fleets, an electronic spreadsheet may suffice as a data management system. For larger fleets, dedicated software and telemetry systems may be more appropriate for optimal efficiency.
Fleet Efficiency Technologies	Technology can play a very important role in fuel conservation and efficiency improvements. Large fleets can realize dramatic environmental and cost savings by making use of anti-idling and fleet utilization technologies. Fleets can also improve efficiency by increasing the level of coordination and communication among departments and external partners.	<p>Install on-board systems (e.g. idle shutdown timers), which can often be purchased along with new equipment, or installed on existing fleet vehicles.</p> <p>Trip/route planning software can help reduce idle time and guarantee the most efficient routes on a daily basis. For large fleets, it can be specified at the time of purchase or installed as an add-on. Small fleet managers could use free Internet mapping tools instead.</p> <p>In-vehicle telematics (e.g. Global Positioning Systems): an electronic GPS device is installed in each vehicle, which communicates with software (e.g. at the main fleet office) to collect and interpret positional data transmitted by each vehicle. Data can include vehicle location, driving speed and idling times to provide fleet managers with a snapshot of their fleet's driving habits and practices.</p>
Diesel Vehicle Emission Reductions/New Engines and Retrofits	Diesel engines are significant generators of fine particles and toxic emissions. Reducing diesel particulate emissions can result in improved air quality, along with improved health for fleet employees (drivers and mechanics) who are exposed to diesel exhaust on a daily basis.	Utilizing on-road diesel vehicles to modernize their fleet to current green standards by retrofitting or installing new engines (year 2007 or newer) on 50 percent or more of their diesel vehicles.
Vehicles painted in light rather than dark colours	Light colours reflect rather than absorb sunlight and therefore reduce the need for air conditioning in the summertime.	Choose light colours, such as white or cream for vehicles.

Resources

- RPN online Hybrid Calculator is a publicly available tool that can be used to compare the lifecycle costs and emissions of hybrid and conventional vehicles <http://www.responsiblepurchasing.org/calculator/index.php>
- Responsible Purchasing Network (RPN) www.responsiblepurchasing.org

Office Furniture

What are the key green issues?

- » **Resource Consumption:** Office furniture made from wood that was sourced through poor forest harvesting practices often leads to soil erosion, deterioration of watersheds and loss of plant and animal species. The use of exotic woods like teak and mahogany has led to the destruction of habitat and the loss of biodiversity. Deforestation also impedes the ecosystem's ability to sequester CO₂ and is therefore one factor in human-induced climate change.
- » **Emissions, Indoor Air Quality and Human Health:** Indoor air quality can be 3 to 4 times more polluted than outdoor air. A series of air pollutants are associated with furniture, both during furnishing manufacturing and furniture use. The release of VOCs and other pollutants from furniture and equipment can cause various health concerns, from headaches, eye, nose, throat, and skin irritation, to nausea and respiratory problems and even cancer.
- » **Waste and End of Life:** Recycled-content, recyclability and design for disassembly are key issues to consider when selecting office furniture. Experts estimate that 1.5 million desks and 8.25 million office chairs are thrown away every year in the US.

Myth Buster

Green doesn't have to be expensive or uncomfortable. There is a wide variety of suppliers that offer greener office furniture today comparable in price and comfort with conventional furniture.

Office furniture includes chairs and other types of seating, as well as desks, tables, systems furniture (office cubicles), filing, storage cabinets and their associated components designed for use in office environments. Office furniture is made from a variety of materials including wood, wood-based products, metal, plastics, fabric etc.



How does green office furniture advance Government's strategic priorities?

✓ Reducing Natural Resource Use

Buying furniture made of certified wood products helps reduce the potential impacts associated with forest harvesting and promotes watershed protection and biodiversity.

Furniture containing a high amount of recycled materials and/or rapidly renewable materials instead of virgin wood or other materials will reduce the amount of natural resources needed for production. By recycling used materials from older office products, 85 to 95 percent of the labour and energy used to create a piece of office furniture from raw materials can be reduced.

Modular furniture can be easily adapted to changing work environments (i.e. office relocation or resizing), which will save time and costs. Durable furniture will also save resources required to replace broken or outdated furniture when it breaks or becomes aesthetically outdated.

✓ Reducing Emissions and Improving Air Quality

Furnishing offices with options that have low-VOC coatings and low or no levels of other harmful chemicals can immediately improve the quality of the air that you and your staff breathe 40+ hours a week. Less chemical exposure and cleaner air mean more productivity from healthier employees — and potentially even fewer missed workdays from illness.

Using naturally derived adhesives and resins as a binding agent for fibreboard (e.g., particle board and plywood) instead of formaldehyde, reduces the impact on indoor air quality and human health.

Blowing agents such as water and carbon dioxide to produce polyurethane foam cushions are becoming the norm with the complete phase out of HCFCs by 2020.

✓ Reducing Unnecessary Waste/Recycling

Green office furniture is more durable and lasts longer, preventing frequent disposal and reducing accumulation in landfills.

Modular furniture is designed to be adaptable to new spaces and styles to prevent frequent replacement and waste issues.

Green office furniture avoids excessive and non-recyclable packaging, which reduces the need for the user to dispose of packaging materials.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Has received certification or meets or exceeds criteria for ecolabels such as Canada's ECOLOGO, and/or GREENGUARD, and/or SCS Indoor Advantage</p>	<p>Office furniture, e.g. chairs, casework, desks, systems furniture, cabinetry, and panel systems must be either ECOLOGO, GREENGUARD, SCS Indoor Advantage or Cradle to Cradle certified to improve indoor air quality and reduce negative impacts on human health. Furniture certified by either of these standards is readily available.</p>	 <p>Greenguard certification gives you assurance that the furniture will not contribute to any indoor air quality issues associated with the types of adhesives, blowing agents, and furniture coatings.</p>  <p>SCS Indoor Advantage gives assurance that furniture will not contribute to any indoor air quality issues.</p>  <p>ECOLOGO™ gives assurance on resource conservation, reduction in disposal, and reduction in VOC emissions for Demountable Partitions and Panel Systems.</p>  <p>The Cradle to Cradle Certified™ Products Standard gives assurance on material health, material reutilization, renewable energy and carbon management, water stewardship and social fairness.</p>
<p>✓ Wood materials used in furniture must be grown and harvested in a sustainable manner</p>	<p>Requesting furniture made from FSC, SFI or CSA-SFM certified wood helps reduce the potential impacts associated with forest harvesting and promotes sustainability supporting watershed protection, and biodiversity.</p>	 <p>Wood is certified by one of the following internationally recognized forest certifications, which gives you assurance about the environmentally friendly management of forests:</p>  <p>Forest Stewardship Council (FSC) Sustainable Forestry Initiative (SFI)</p>  <p>Canadian Standards Association (CSA) Group Sustainable Forest Management System (SFM) standard</p>
<p>✓ Minimum average 30 percent recycled and biodegradable content, preferably post-consumer waste (PWC)</p>	<p>Recycled content is a key way to increase resource efficiency and reduce GHG emissions.</p>	<p>Ask your supplier for recycled content rate.</p>

FACTSHEET #7: OFFICE FURNITURE

Recommended	Why is it important?	How do I know I am getting it?
<input checked="" type="checkbox"/> Take-back policy to refurbish or re-use materials from old office furniture	Take-back policies from suppliers for used furniture can ease the burden of disposal and may divert the used furniture from entering the landfill.	Ask your supplier to provide proof of a take back policy.
<input checked="" type="checkbox"/> Formaldehyde-free Adhesives	Adhesives used in construction, including fibreboard binders must be formaldehyde-free.	If product is not certified, ask vendor for a Material Safety Data Sheet (MSDS).
<input checked="" type="checkbox"/> Low VOC or VOC free Furniture glues and adhesives	Low or no VOC content significantly improves indoor air quality and reduces health risks.	If product is not certified, ask vendor for a MSDS.
<input checked="" type="checkbox"/> Metal components must be powder coated	Powder coating does not require a solvent to keep the binder and filler parts in a liquid suspension form. Solvents contain chemicals that negatively affect human health.	If product is not certified, ask vendor for a MSDS.
<input checked="" type="checkbox"/> Fabric options include recycled content and non-toxic fabric dyes and other treatments	Reducing or eliminating toxic chemical content in fabrics will improve indoor air quality.	Ask your vendor to submit a MSDS for any additional chemical used to treat fabric for such purposes as mothproofing, inhibiting mold, mildew resistance and flame retarding. The Oeko-Tex label gives assurance that products meet applicable standards for substances of high concern.
<input checked="" type="checkbox"/> Durability	The longer the lifecycle of your office furniture, the more resources are saved.	Look for vendors who provide a minimum warranty of 5 years on chairs and interconnecting panels, and a minimum warranty of 10 years on workstations and filing cabinets.
<input checked="" type="checkbox"/> Take back of packaging by supplier; minimal, recyclable and/or reusable packaging (such as blanket wraps), corrugated cartons with a minimum of 30 percent post consumer recycled content	<p>A supplier take back of packaging will reduce government waste.</p> <p>Minimal and reusable or recycled packaging will contribute to a reduced use of resources and diversion of waste from the landfill.</p>	Ask your supplier for a take back guarantee for packaging as well as for proof of the recycled packaging content.

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Sustainable Delivery Strategies	Consolidating delivery schedules through efficient transportation logistics, proper route planning and no idling of vehicles during product delivery will minimize greenhouse gas emissions and solid waste production.	Work with your vendor for sustainable delivery strategies.

Waste Hauling and Recycling Services

Waste Hauling and Recycling services are services offered by waste management companies to pick up and recycle waste materials produced in government buildings, warehouses, schools, hospitals and related facilities. Typically, waste hauling and recycling service companies provide steel collection containers outside of buildings for either garbage (landfill) and cardboard, or large rolling carts for recyclable materials that are stationed inside buildings and assembled in a loading area at designated pick-up times.



What are the key green issues?

» GHG Emissions and Air Quality:

Although Newfoundland and Labrador has the lowest per capita waste disposal rate in Canada, the waste sector accounts for about 7 percent of the GHG emissions in Newfoundland. The transportation emissions associated with waste hauling services, primarily from heavy-duty trucks, is also a source of CO₂ emissions, particulate matter and other air contaminants that can affect both human and environmental health.

» **Fuel-Efficiency:** Heavy waste hauling vehicles consume more diesel fuel due to their frequent stop-load-start cycles. Their pick-up and disposal patterns within town or urban centres are also affected by other traffic and congestion. This causes frequent, short-term idling with stop and go acceleration that in turn increases fuel consumption and associated GHG emissions and pollutants.

» **Land Use:** Landfills located near towns and urban centres are frequently located on potentially valuable land. Habitat destruction when opening a new landfill can affect wildlife and flora. Reducing the volume of waste going to landfills can help reduce these impacts and their use of land.

» **Resource and Material Use:** In Canada, 47 percent of office waste is typically paper. Paper as well as other recyclable products such as metal, plastics and organics make up the majority of office waste streams. Yet, these materials are readily recyclable and if done so, can reduce resource and material use to create a cyclical flow of materials in the market.

How do waste and recycling services advance Government's strategic priorities?

✓ Reducing Emissions and Improving Air Quality

Efforts to increase the fuel efficiency of the vehicle fleet will reduce the amount of greenhouse gasses, air pollutants that impact both human health and are a leading cause of climate change.

✓ Reducing Resource Use


Recycling reduces our harvest of natural resources. Making products out of recyclable materials often requires much less energy and water than if the products were made from raw, virgin materials. This is in line with the [Provincial Solid Waste Management Strategy](#) that aims at reducing the amount of waste going into landfills in the province by 50 percent by 2020.

✓ Reducing Unnecessary Waste

Besides reducing our use of resources, recycling as much of the waste material we generate as possible is the second best way to reduce environmental impacts. Waste and recycling services can assist in diverting organics to a commercial composting facility for processing, thereby avoiding the production of methane gas and leachate.

Myth Buster

It all goes to landfill. Waste and recycling service providers under green contracts and contract management provide an auditable chain of custody to assure buyers that diversion rates and materials are recycled properly.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Specify a minimum fuel efficiency level for the hauler's fleet that is in the top 20–30 percent of the vehicle class</p>	<p>Fuel-economy varies significantly between the best in class and worst in class models, by vehicle class and engine type. Choosing the top fuel efficiency levels within the class can ensure a significant reduction in fuel consumption and emissions.</p>	<p> EnerGuide helps identify the most fuel efficient vehicles in a vehicle class.</p>
<p>✓ Request collection bins that are right-sized to the mass and volume of wastes</p>	<p>Right sizing bins will ensure hauling vehicles are optimally scheduled to collect the maximum amount of volumes before going to waste handling facilities or the landfill, reducing the amount of fuel used and associated GHG emissions.</p>	<p>Site inspection at contract initiation and spot inspections thereafter to ensure volumes meet the size of bins.</p>
<p>✓ Collection bins are made from recycled materials</p>	<p>Collection bins from recycled materials can reduce resource use and enhance the department's image with the public.</p>	<p>Site inspections to ensure bins are made from recycled materials.</p>
<p>✓ Request a written guarantee from the vendor that ensures all materials picked up by the vendor (wastes, recyclables, compost) are sent to the correct facilities</p>	<p>There have been some very high-profile cases of recycling fraud, e.g. where a recycling firm was found to lack the capability to actually recycle the materials they claimed to recycle.</p> <p>Regular reporting by the vendor, usually submitted with the invoice, is key to understand the rate of successful recovery at each serviced location.</p>	<p>A written guarantee by the vendor and monthly chain of custody records that show amounts hauled, recycled by mass that was accepted at the handling or landfill facilities.</p>
<p>✓ Organic materials collected must be delivered to a composting facility and used to create compost in accordance with all requirements set out by provincial legislation</p>	<p>Ensures compliance with provincial regulations.</p>	<p>Ask your supplier to declare compliance with provincial regulations.</p>
<p>✓ Request vendors identify any other recycling opportunities you may not have listed in your bid documents</p>	<p>Vendors may be able to provide other services or know of opportunities developing in the near future (e.g. light bulb recycling, primary battery recycling). Consolidating services might save costs.</p>	

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Consolidating Service Contracts	Having many different waste haulers often results in different service levels, expectations and levels of reporting on diversion rates.	Reduction in the number of contracts hauling similar wastes or recyclables.
Waste Audits	Periodic waste audits can help a department prioritize its efforts to reduce waste at the source and encourage higher levels of diversion or recycling.	Audits structure and process follows established guidelines such as those from the Canadian Council of Ministers of the Environment (CCME) .
Worker Training	There are costs associated with training workers to separate recyclables and compostables. While a few composters provide this service, many do not.	Make sure to figure in training time in your cost estimates. Ask your vendor for this service.
Ensure the vendor informs you in a timely manner of any changes to the recycling market, changes of the original delivery location or whether a commodity can no longer be directed to a facility for recycling	This may affect the recycling of commodities your company is collecting.	Include this requirement in the contract. Have changes be reported in general reporting documents.

Wood for Construction

What are the key green issues?

- » **Resource Consumption:** Illegal and unsustainable forest practices, together with land conversion for agriculture, are the main causes of deforestation and forest degradation. 50 percent of the world's forests have been lost in the last 50 years, with 130,000 km² lost annually.
- » **GHG Emissions:** The world's forests play a significant role in sequestering and storing carbon dioxide. Wood used in construction helps to store carbon within the building itself.
- » **Water Quality and Soil Retention:** Unsustainable forestry practices can create significant run-off, soil destabilization, erosion and sedimentation that affect our watersheds and ultimately our water quality.
- » **Biodiversity:** Forests also play a particularly important role in providing habitat for the plants and animals that shelter under their canopies allowing them to survive
- » **Emissions, Indoor Air Quality and Human Health:** Indoor air quality can be 3 to 4 times more polluted than outdoor air. A series of air pollutants are associated with the production and use of engineered wood products. The release of VOCs and other pollutants from wood can cause various health concerns.

Myth Buster

Wood from sustainably managed forests used to be difficult to find in Canada. Today, Canada has the most hectares (75 percent of which is in the boreal) 3rd party independently certified forests (CSA, FSC, SFI) in the world.

Wood is used either directly or indirectly for a wide range of products, from construction and flooring to furniture, paper and packaging. It is one of the world's most common building materials. For the purposes of this guide, wood for construction includes framing, engineered woods such as glulam, laminated veneer lumber (LVL), parallel strand lumber, and key components such as trusses, staircases, window frames, doors, plywood, medium density fibreboard, orientated strand board (OSB), decking and cladding.





How does greener wood for construction advance Government's strategic priorities?

- ✓ **Demonstrating Legal and Regulatory Alignment with Other Jurisdictions**
By purchasing wood from sustainably managed forests, the government can demonstrate they are following widely accepted policies and ensure alignment with current and upcoming legislations and regulations.
- ✓ **Reducing Climate Change Impacts**
By purchasing wood from sustainably managed forests, the government is supporting the ability for forests to remove carbon dioxide from the atmosphere. One tree removes one metric ton of carbon dioxide from the atmosphere per year.
- ✓ **Reducing Resource Consumption**
Sourcing wood from sustainably managed forests reduces deforestation and habitat destruction and increases biodiversity. Forests are essential for human survival and well-being. They are among the most biodiverse and valuable terrestrial ecosystems on the planet. They provide us with food, oxygen, shelter, recreation, and spiritual sustenance; and they contribute to the livelihoods of 1.6 billion people worldwide.
- ✓ **Improving Water and Air Quality**
A sustainably managed forest ensures the soil erosion and sedimentation do not adversely affect water quality and the ecosystem health of the surrounding water shed. Engineered wood products that do not contain formaldehyde or solvents and low VOCs can immediately improve the quality of the air. Less chemical exposure and cleaner air means less risk to construction workers and healthier indoor environments — and potentially even fewer missed workdays from illness.
- ✓ **Reducing Wastes**
It is possible to use wood products and related residues, sawdust, wood chips, by-products and biomass in their entirety. They can be burned for energy, wood chips can be used for compost and spreading on fields, while leaves and pine needles can be composted and used for agricultural and cultivation purposes.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Where economically feasible, wood for construction should be sourced from sustainably harvested wood.</p>	<p>Sustainable forest management addresses key environmental forest values — from water quality and biodiversity to harvesting and regeneration thereby advancing several government priorities.</p>	<p>Wood for construction is certified by one of the following internationally recognized forest certifications. This gives you assurance that the wood is from sustainably managed forests paper.</p>     <p>Forest Stewardship Council (FSC) Sustainable Forestry Initiative (SFI) Programme for the Endorsement of Forest Certification (PEFC) Canadian Standards Association (CSA) Group Sustainable Forest Management System (SFM) standard</p>
<p>✓ Consolidate product delivery</p>	<p>By consolidating the product delivery schedule, e.g. from every day to once a week and optimized route planning, fuel emissions can be reduced.</p>	<p>Engage the supplier and ask for a consolidated delivery schedule.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Wood for construction is supplied by a certified company to prove a transparent chain of custody</p>	<p>Chain of Custody certification is a mechanism for tracking certified material from the forest to the final product. This ensures that wood or wood fibre contained in a product or product line and the company that is providing it are certified.</p> <p>Note: Providing a Chain of Custody certificate number is a requirement for LEED NC 2009 Materials and Resources Credit 7.</p>	 <p>The chain of custody can be certified by one of the following internationally recognized forest certifications.</p> <ul style="list-style-type: none"> Forest Stewardship Council (FSC) Sustainable Forestry Initiative (SFI) Programme for the Endorsement of Forest Certification (PEFC)
<p>Engineered wood products is formaldehyde free, solvent free and low VOC</p>	<p>Engineered wood products must be either GREENGUARD or SCS Indoor Advantage Gold — Building Products or CARB Formaldehyde Compliance certified to improve indoor air quality and reduce negative impacts on human health.</p>	 <p>Greenguard certification gives you assurance that the wood will not contribute to any indoor air quality issues associated with the types of adhesives.</p> <p>SCS Indoor Advantage gives assurance that the wood product will not contribute to any indoor air quality issues.</p> <p>CARB certification will ensure the wood product does not contain formaldehyde.</p>
<p>Prefabrication</p>	<p>Prefabricated wood components manufactured before on-site assembly can reduce material waste, improve dimensional stability and provide higher levels of precision.</p>	<p>Ask your supplier for prefabricated wood components.</p>

Resources

- Sustainable Timber: A Guide to Procurement for the Public Sector, Programme for the Endorsement of Forest Certification (PEFC), 2012.
URL: www.pefc.org/images/documents/PEFC_Sustainable_Timber_Procurement_Public_Sector_1.pdf
- Sustainable Procurement of Wood and Paper-based Products, World Resources Institute and World Business Council for Sustainable Development, 2012.
URL: www.pefc.org/images/documents/external/sustainable_procurement_wood_paper_based_products_v3.pdf

Flooring

What are the key green issues?

- » **Human Health and Safety:** Carpets can harbour mold, dirt and dust mites within the fibres and backing that can lead to allergies and skin reactions. Some toxic chemicals and shampoos used in cleaning can affect the health of cleaning staff.
- » **Indoor Air Quality:** Carpets seam sealants, carpet padding and especially adhesives contribute to Volatile Organic Compounds (VOCs) off gassing. Anti-static, anti-soil, anti-stain, and anti-microbial coatings can also contribute to poor indoor air quality.
- » **Waste and Durability:** Carpets can be significant contributors to construction and demolition waste going to landfill.
- » **Materials/Energy Use and Emissions:** Carpets production of nylon based carpets is energy and water intensive. Dyeing by wet methods, steam fixing and drying consumes additional energy and water and result in wastewater releases to the environment.

Myth Buster

It is not true that bamboo flooring is too soft and less durable compared to hard wood floors. The fact is that solid bamboo floors are quite hard and their strength is easily comparable to that of Northern Red Oak. Strand Woven bamboo flooring makes the hardest type of wood flooring on the market that responds well to frequent changes in temperature and humidity levels.

Flooring includes indoor carpets, finished concrete, hardwood, linoleum and vinyl used in indoor offices, hallways, and common spaces and is typically installed as part of a new building or in a building improvement.



How does greener flooring advance Government's strategic priorities?

✓ Improving Human Health and Safety

Selecting a flooring material that has low or no VOCs and uses low VOC adhesives or non-toxic materials, finishes and cleaners will protect human health.

Materials such as finished concrete offer lower maintenance and lower total cost of ownership because of their ease of cleaning and durability.

✓ Reducing Emissions and Improving Air Quality

A flooring material that reduces the need for adhesives or chemically intensive cleaning solutions will improve air quality during installation and use.

Carpet tiles and finished concrete use either minimal or no adhesives at all, making installation easy while also having minimal impact on indoor air quality.

✓ Reducing Energy and Natural Resource Use

Carpeting that is made with natural and bio-based materials, recycled materials or hardwood from sustainably managed forests will help reduce energy and resource use.



Hard surface flooring such as finished concrete, hardwood, linoleum and vinyl are less energy, water and detergent intensive to clean and maintain. Some manufacturers of vinyl flooring use pre-consumer and post-consumer recycled content as well as bio based and sustainably sourced materials.




Polished and maintained concrete floors can be expected to last a hundred years or more, reducing the need for regular replacement and resource use.

✓ Reducing Unnecessary Waste

Carpet tiles and finished concrete have minimal installation waste.

Recycling of nylon carpet and use of postconsumer or post-industrial recycled material in their manufacture can also reduce waste. Many carpet manufacturers have carpet take back programs.

Recommended	Why is it important?	How do I know I am getting it?
CARPETS		
<p><input checked="" type="checkbox"/> All carpets must be CRI Green Label certified</p>	<p>Substituting conventional carpets with green options is one of the most effective ways to reduce or eliminate exposure to chemicals that pose environmental and human health risks.</p>	<p> CRI Green Label: Carpet and carpet cushion meet the requirements by the CRI Green Label Testing Program, which assures low VOC emissions and improved indoor air quality.</p>
<p><input checked="" type="checkbox"/> Carpet must contain greater than 20 percent recovered material content (fibre and backing)</p>	<p>A greater recycled content ensures that resources and energy used to manufacture the carpet and backing are reduced.</p>	<p>Ensure with the supplier that the carpet contains greater than 20 percent recovered material content, preferably as post-consumer recycled content.</p>
<p><input checked="" type="checkbox"/> Cushion/underlay must meet CRI Green Label Plus program requirements</p>		<p> CRI Green Label Plus program assures that the cushion/underlay contain greater than 20 percent post-consumer post-industrial waste content and be 100 percent recyclable.</p>
<p><input checked="" type="checkbox"/> Adhesive must be CRI Green Label Plus certified</p>	<p>Adhesives contribute to Volatile Organic Compounds (VOCs) off-gassing, often prompting asthma attacks and other health issues.</p>	<p>CRI Green Label Plus program assures that adhesives meet stringent total volatile organic compounds (TVOC) requirements.</p>
<p><input checked="" type="checkbox"/> Carpet take back program</p>	<p>A take back program is a voluntary recycling program by a retailer or manufacturer that takes back the purchased product after its end of life to recycle and properly dispose of it.</p>	<p>Only choose a supplier with a carpet take back program.</p>
<p><input checked="" type="checkbox"/> Carpet tiles should be standard</p>	<p>Allow for ease of maintenance and replacement of soiled areas.</p>	<p>Choose a supplier who offers tiles.</p>
FINISHED CONCRETE		
<p><input checked="" type="checkbox"/> Low or no VOC finishes</p>	<p>Reduce impacts on indoor air quality during installation.</p>	<p>Choose a supplier who can verify low/no VOCs through a product specification or MSDS sheet.</p>

Recommended	Why is it important?	How do I know I am getting it?
HARDWOOD		
<p>✓ Wood must be sourced from sustainably harvested wood</p>	<p>Sustainable forest management addresses key environmental forest values—from water quality and biodiversity to harvesting and regeneration.</p>	<p>Wood is certified by one of the following internationally recognized forest certifications, which gives you assurance about the environmentally friendly management of forests as a source for the wood.</p> <p>  Forest Stewardship Council (FSC)  Sustainable Forestry Initiative (SFI)  Canadian Standards Association (CSA) Group Sustainable Forest Management System (SFM) standard </p>
<p>✓ Low or no VOC finishes</p>	<p>Reduce impacts on indoor air quality during installation.</p>	<p>Choose a supplier who can verify low/no VOCs through a product specification or MSDS sheet or has the following certifications:</p> <p>  FloorScore: Assures that your flooring promotes healthy indoor air quality and complies with the volatile organic compound (VOC) emissions criteria of the California Section 01350 standard.  GreenGuard: Ensures a product has met some of the world's most rigorous and comprehensive standards for low emissions of volatile organic compounds (VOCs) into indoor air. </p>
LINOLEUM		
<p>✓ Low or non-toxic adhesives</p>	<p>Reduce impacts on indoor air quality during installation.</p>	<p>Choose a supplier who can verify low/no VOCs through a product specification or MSDS sheet or has the following certifications:</p> <p> FloorScore GreenGuard </p>
VINYL		
<p>✓ Low VOC emitting materials</p>		<p>Choose a flooring that meets:</p> <p>FloorScore</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Use Carpet Tiles	Carpet tiles rather than roll carpets enable spot replacement of damaged tiles and thus increases the life of the whole carpeted area.	Ensure with your carpet supplier different carpet tile options and their service guarantees.
Synthetic carpet fibres should be solution dyed	Solution dyed carpet considerably reduces the amount of energy and water usage that is associated with wet dying. It is less prone to fading and side match problems thus increasing the life of the carpet and reducing carpet wastage during installation.	Ensure with the supplier that synthetic fibre carpets have been solution dyed.

Architectural

What are the key green issues?

- » **Energy Consumption and GHG Emissions:** The energy consumed in the process of manufacturing pigments, such as titanium dioxide (TiO₂) in white paints, is one of the most significant environmental impacts associated with paint. Latex and oil-based paints are both formulated with petrochemicals and hazardous substances such as organic solvents. The latex used in water-based latex paint is synthesized from petroleum, i.e. crude oil, and oil-based paints are thinned with petroleum distillate solvents.
- » **Indoor Air Quality, Pollutants and Toxins:** All oil-based, most water-based, and some natural paints contain toxic organic solvents to disperse and bind other paint components. Many paints use Volatile Organic Compounds (VOCs) as solvents, which pollute the air and lower indoor air quality.
- » **Water Quality:** Water-based latex paints generally contain fewer toxic materials and VOCs than oil-based paints but are still ecologically hazardous. When equipment is washed with water, waste paint is washed into waterways and ground water, and can damage aquatic life with toxins that accumulate over time. Latex paint contains high concentrations of pigments that increase turbidity or murkiness in water, which blocks sunlight to plants and disrupts the natural cycle of oxygen.
- » **Waste:** Leftover architectural paint represents between 40 percent and 60 percent of all material collected at household hazardous waste facilities and events. Both steel and plastic paint cans are recyclable, but not every community accepts them as part of their recycling program. The maximum recycled-content in steel cans is 30–35 percent, while plastic containers could be made from 100 percent post-consumer materials.

Architectural paints are coatings intended for on-site application to interior and exterior surfaces of institutional buildings. It includes flat paints, gloss paints, primers, stains and varnishes.



How does green paint advance Government's strategic priorities?

✓ Reducing Energy Use and Toxins

Substituting a petrochemical-based solvent (alkyd) with a water-based solvent (latex) or choosing paints with lower amounts of petrochemical-based solvent reduces the energy and materials used. Reducing VOCs may also reduce negative downstream health and environmental effects.

✓ Reducing Unnecessary Waste





Recycled paint uses leftover paint in place of virgin materials, thus reducing the need for the further extraction of materials. Recycling paint can also mitigate the high cost of end-of-life management and keep waste out of the landfill. Evaluating the need for paint and also ensuring that only the required amount of paint is purchased will reduce leftover paint that has to be disposed of.

✓ Reducing Costs

Switching to environmentally preferable paints can yield savings by reducing the handling and disposal costs of hazardous materials. Using paints with little tint can also save on operating and maintenance costs. Use of colorants often drops the gloss/sheen and the durability of the applied coating. Lighter colours require less maintenance because they are more abrasion resistant and require fewer coats.

Myth Buster

Environmentally preferable paint doesn't last as long as conventional paint. The Green Seal and ECOLOGO certifications assure purchasers that recycled paint is environmentally preferable and performs just as well as virgin paints, both in terms of quality and longevity of finish.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Paints shall be low or no VOCs and certified by ECOLOGO, or Greenseal, or be certified by MPI Green Performance Paint standard GPS-2 or MPI extreme Green Performance Standard</p>	<p>Ensures that interior non-flat paints shall not exceed 150 VOC g/L; and interior flat paints shall not exceed 50 VOC g/L. Also ensures reduced or zero quantities of various undesirable chemical components.</p>	<div style="display: flex; flex-direction: column; align-items: center;">     </div> <p>ECOLOGO™ gives you assurance that paint has been thoroughly evaluated for its lifecycle environmental impacts, including a reduced amount of materials and energy use; minimal health impacts, as well as product performance and use.</p> <p>Green Seal gives you assurance on performance requirements and environmental health requirements such as recovered and post-consumer material, and reduced toxicity.</p> <p>Greenguard certification gives you assurance that paints designed for use in indoor spaces meet strict chemical emissions limits, which contribute to the creation of healthier interiors.</p> <p>MPI Extreme Green Performance™ Standard ensures adherence to performance requirements, chemical component restrictions, a maximum allowable limit of 50 g/L of VOCs, and emissions compliance to CHPS (Collaborative for High Performance Schools).</p>
<p>✓ Containers are recyclable and made from recycled materials</p>	<p>Reduces waste and resource use for new container production.</p>	<p>Have your supplier verify that containers are recyclable and made from recycled materials.</p>
<p>✓ Take-back services for paint leftovers and containers</p>	<p>Ensures proper disposal and also reduce government's waste management costs.</p>	<p>Ask your supplier to verify that paint leftovers are returned to a paint recycler and empty containers can be returned.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Use light coloured paint for indoor environments	Light-coloured paint reduces the need for artificial lighting indoors, as its reflectivity increases the dispersion of natural light in offices and classrooms. It also reduces maintenance costs, as it requires fewer coats and is more abrasion resistant. It enhances employee productivity through day lighting and tends to contain less hazardous chemicals.	
Paints made from natural non-petrochemical based resources	Natural, non-petrochemical paints are often made from a plant, e.g. soy, or mineral base and ensure better indoor quality.	Natural paints are not always suitable for outdoor painting. Ask your supplier for natural paint options.
Consider alternatives to paint	Some wall treatment options, e.g. some stains, washes, and clay plasters, may be less-toxic options for brightening and protecting all types of surfaces. Wall coverings made from cork, organic cotton, jute, bamboo, 100 percent post-consumer recycled paper and other renewable materials can reduce environmental and health risks.	Ask your supplier for alternative wall treatment options.

Resources

- Responsible Purchasing Network, [Responsible Purchasing Guide Paint](#)
- Resort Municipality of Whistler, [Sustainable Purchasing Product Assessments. Paint](#)
- BC Procurement Services Branch, [Green Purchasing. Buying Goods. Paint](#)

Office Supplies

What are the key green issues?

» Resource Use and Greenhouse Gas Emissions and Toxins:

- **Binders:** Office binders are often covered with polyvinyl chloride (PVC or vinyl) plastic. PVC is the most toxic plastic for both human health and the environment. No other plastic contains or releases as many dangerous chemicals, including dioxins, phthalates, vinyl chloride, ethylene dichloride, lead, and cadmium, which are linked to diseases such as cancer, asthma, birth defects, reproductive harm, learning disabilities and developmental disabilities.
- **Ink and Toner Cartridges:** Toner cartridges placed in photocopiers, fax machines and multifunction devices have significant environmental implications with respect to resource and energy consumption during their production. The process of manufacturing cartridges is considered energy consumptive with up to 3 liters of oil used to manufacture the cartridges plastic casing alone.
- **Pens and Pencils:** Writing instruments can contain hazardous wastes including toxins found in plastics, metals and inks, which have environmental and human health costs. Petroleum-based solvents used in many types of ink are VOCs, which off-gas when drying causing problems for indoor air quality.

» Waste:

- **Ink and Toner Cartridges:** Used cartridges contribute to landfill waste. 350 million cartridges are disposed of annually in North America while some of the toner in these cartridges goes unused. Plastic cartridge casings can take up to 450 years to decompose in landfills. The toner inside cartridges is toxic and can damage the environment by contaminating groundwater and soil.

Office supplies are supplies regularly used in offices by organizations. They include small, daily use items such as paper clips, post-it notes, staples, staplers, binders, writing utensils such as pens and pencils as well as ink and toner cartridges for printers, fax machines, photocopiers and multifunctional devices. For the purpose of this factsheet, we are focusing on binders, ink and toner cartridges and pens and pencils.



How do greener office supplies advance Government's strategic priorities?

✓ Reducing Energy, Resource Use and Toxins

Binders and File Folders: Recycled cardstock binders with either no cover or a low VOC recycled plastic cover reduce resource use and health affecting emissions. Replaceable covers will increase the lifespan of the metal binding should the raw cardstock ever wear out.

Pens and Pencils: There are a variety of green options on the market made from everything ranging from wood to recycled post consumer plastic. Pens and pencils recently have even been made from recycled denim and money and even use non-toxic ink, which improves indoor air quality and human health. These pens reduce the consumption of petroleum products used to create energy for the extraction of the materials that are used to make instruments. They also reduce the depletion of other natural resources used to construct instruments such as rubber, metals, trees and petroleum.

✓ Reducing Unnecessary Waste


Generally, the best way to reduce waste is to buy supplies only when they are needed.

Pens and Pencils: Purchasing recycled, biodegradable, refillable or reusable products will reduce accumulation of used instruments in landfills.

Toner Cartridges: Recycling end-of-life cartridges and producer take back programs keep cartridges out of the landfill and also enable remanufacturing of used cartridges, reducing the material and energy used for new ones.

Myth Buster

Remanufactured toner and ink cartridges perform just as well as those that are new. Contrary to refilled cartridges they have been completely disassembled with all components inspected, separated and cleaned, installed with a new drum, new wiper blade and new magnetic roller, filled with new toner to original specifications, and sealed with a pull-out strip to prevent leakage.

Recommended	Why is it important?	How do I know I am getting it?
BINDER AND FILE FOLDERS		
<p>✔ Look for binders that are made from recycled corrugated cardboard, paperboard and recycled plastic with at least 25 percent post consumer recycled content and are PVC free</p>	<p>Post-consumer recycled content increases resource efficiency and decreases waste. Being PVC free reduces health risks.</p>	<p> Binders are certified by ECOLOGO™. Verify with vendor the percentage of post consumer recycled content.</p>
PENS AND PENCILS		
<p>✔ Look for recycled pens and pencils (and ideally refillable) with at least 50 percent post consumer recycled content</p>	<p>Using pens and pencils from recycled materials (plastic, waste wood, waste newspaper, and cardboard) diverts those materials from landfill.</p>	<p>Pens and pencils are certified by ECOLOGO™. Verify with the vendor the percentage of post consumer recycled content.</p>
<p>✔ Look for refillable pens, pencils and markers</p>	<p>In refillable pens, pencils and markers, the pencil lead and/or the ink are the only consumable parts, while the barrels (usually made of plastic) are durable. Using these will contribute to waste reduction.</p>	<p>Pens are certified by ECOLOGO™.</p>
<p>✔ Biobased materials</p>	<p>Biobased materials are often biodegradable, e.g. pens made from cornstarch disintegrate within one year of being in a landfill.</p>	<p>Verify with your supplier whether he can offer writing instruments from biobased materials and whether they are biodegradable.</p>

Recommended	Why is it important?	How do I know I am getting it?
TONER/INK CARTRIDGES		
<p>✓ Buy toner cartridges that have been fully remanufactured or are ECOLOGO™ certified</p>	<p>Buying remanufactured cartridges reduces material, energy use and landfill waste. It ensures that remanufacturers will disassemble, clean, repair, remove worn parts, refill and, if necessary, dispose of cartridges to an acceptable standard.</p>	<p>Specify that cartridges are remanufactured to specifications equal to or exceeding original equipment manufacturer's (OEM) cartridge standards of quality and performance, as well as approved remanufactured toner cartridge industry standards.</p>
<p>✓ Manufacturer has a take back program for end-of-life toner cartridges</p>	<p>A supplier/manufacturer take back program reduces waste and cost for government.</p>	<p>Many manufacturers allow consumers to send cartridges back free of charge.</p>
<p>✓ Packaging:</p> <ul style="list-style-type: none"> • Must permit users to repackaged spent cartridges for return to the manufacturer • Corrugated packaging must contain post consumer recycled content • Packaging must not contain polyvinyl chloride plastics (PVCs) 	<p>Recycled content in packaging increases resource efficiency and reduces waste to landfill.</p>	<p>Verify with the supplier that spent cartridges can be returned to the manufacturer, that packaging contains post consumer recycled content and that it doesn't contain PVCs.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Reuse Old Binders	Eliminating the need to purchase something new is the best way to reduce environmental impacts as well as costs.	Encourage staff to reuse and relabel old office binders.
Reuse Old Pens	Reusing pens reduces waste and costs.	Encourage staff to reuse old pens that are still functioning or are refillable.
Soy and Vegetable Based Inks	In soy inks, a portion of the petroleum oil has been replaced by soybean or other vegetable oil. Most soy inks still have some petroleum in them. However, soy inks reduce the amount of volatile organic compounds (VOCs) that are released by petroleum oil inks—sometimes by as much as 40 percent.	Ask your supplier for soy and vegetable based ink options, whether they contain petroleum and how much.

Resources

- Resort Municipality of Whistler, [Sustainable Purchasing Product Assessments, Writing Instruments](#)
- Canmore Sustainable Purchasing Guidelines, [Writing Instruments](#)

Drinking Water

What are the key green issues?

- » **Energy Consumption and GHG Emissions:** In 2009, Canadians bought approximately 2.29 billion litres of bottled water. It takes large amounts of energy to produce plastic bottles, approximately 3.4 megajoules to manufacture the packaging, bottle and cap of a one-litre plastic bottle. It results in equally significant amounts of CO₂ emissions.
- » **Water Use:** Increasing worldwide water scarcity makes water a precious resource. In Canada, it takes about 1.3 to 2 litres of water to make one litre of bottled water. Another issue is the extraction of water by private bottling companies, often for export purposes, from Canadian lakes, streams and wells. Over the long term this may negatively impact aquatic wildlife habitats and reduce the water table in the vicinity that supplies water to local communities.
- » **Recycled Content:** The majority of polyethylene terephthalate (PET) bottles are still made from virgin materials rather than recycled content, thus producing additional greenhouse gases. However, big beverage companies such as Coca Cola and Pepsi have started to roll out plastic bottles made from up to 100 percent plant-based renewable resources instead of petroleum-derived resources.
- » **Waste:** In Canada, PET recycling rates range from 60 percent to 85 percent. But the cost of recycling is very high. For instance, in 2011, the gross cost to recycle and process 107,000 tonnes of recyclable material in the region of Peel, Ontario was over \$30 million dollars. When bottles end up in the trash and are incinerated, chlorine (and potentially dioxin) can be released into the air and heavy metals may be deposited in the ash. Sometimes, recycled bottles are destined for export abroad, e.g. to China, thus requiring additional energy to transport.



Drinking water is water consumed for potable purposes in an office or food service/dining area and at government events and functions. It typically comes packaged in plastic or glass bottles. Bottled water could be spring water or processed water and may or may not be carbonated. Spring water is potable water that comes from an underground source.

How do alternatives to bottled water advance Government's strategic priorities?

✓ Reducing Energy Use and Carbon Emissions

By using (filtered) tap water, a large amount of energy use and GHG emissions associated with the production of bottled water is reduced.

✓ Reducing Unnecessary Waste

Although a significant amount of PET bottles are recycled in Canada, these items still make up about 15 to 40 percent of solid waste in our landfills. Not using bottles at all, whether made from plastic or glass, reduces solid waste as well as the energy used associated with bottle recycling.

✓ Reducing Costs

Even taking into account the bulk water purchases and water delivery contracts used by many institutions, bottled water is still more expensive than an equivalent amount of gasoline. Switching to tap water provided by water fountains and plumbed-in dispensers will significantly reduce costs. As municipal infrastructure is already in place to treat and prepare drinking water, no further costs or use of resources are necessary.

County of Santa Clara, California — Switching to Drinking Fountains

Cost of Bottled Water	Cost of Drinking Fountains	Saving over 5 Years
\$655,755 (5 year contract)	\$419,000-\$639,000 (installation in year 1 and yearly maintenance costs for 4 years)	\$16,755-\$236,755


Myth Buster

Some people think that bottled water is safer and purer than tap water. There is no evidence to support this; the quality standards for bottled and municipal waters in Canada are similar.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ Replace bottled water coolers with ENERGY STAR rated plumbed-in, bottle-less dispensers with filtration systems</p>	<p>Bottle-less coolers use 30 to 50 percent less energy than bottled resources and significantly reduce greenhouse gas emissions (GHGs) by eliminating the bottle manufacturing, bottling, storage, distribution, delivery, as well as the removal, recycling, or dumping of used bottles.</p> <p>The cost of bottle-less filtered water coolers is typically half the cost of delivered bottled water.</p>	<p>For filters, ask the supplier which contaminants the filter removes and the percentage it removes; ask for evidence of compliance with NSF/ANSI standards (by NSF International, formerly the National Sanitation Foundation, and the American National Standards Institute).</p>
<p>✓ Install insulated water fountains with filtration systems</p>	<p>Insulated fountains help conserve energy. Filtration systems reduce chlorine taste and odour that many people dislike in tap water.</p>	<p>Ask for compliance with Canadian Standards Association (CSA) and IPC (Association Connecting Electronics Industries) and UPC (Universal product code) standards.</p> <p>For filters, ask for evidence of compliance with NSF/ANSI standards.</p> <p>Ask for types and environmental impacts of refrigerants used. Hydrofluorocarbons (HFCs) have replaced older more ozone depleting hydrochlorofluorocarbons (HCFCs) but are still potent greenhouse gas sources. Ask for HFCs with a short atmospheric lifespan (days or weeks, instead of the dozens of years for a few HFCs now in use).</p>
<p>✓ Reusable bottles/pitchers: Look for unlined containers, containers lined with water-based resins, or ones that have been independently tested if made from plastic, look for high-density polyethylene (HDPE or #2)</p>	<p>Unlined containers or containers lined with water-based resins are proven not to leach health damaging chemicals.</p> <p>High-density polyethylene (HDPE or #2) plastic bottles are known for their durability and wide-ranging recyclability.</p>	<p>Verify with your supplier that containers will not leach and have been independently tested.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Switch to ENERGY STAR rated bottled coolers</p>	<p>If unable to switch to bottle-less coolers, switch remaining bottled water coolers to ENERGY STAR rated coolers, which are more energy efficient (up to 50 percent) than standard water coolers and have more insulation to better keep heated water hot and chilled water cold.</p>	<p>Look for ENERGY STAR rated bottled water coolers.</p> 
<p>Maintain, renovate and/or upgrade existing drinking water infrastructure</p>	<p>If economical, retrofit older fountains, filters, and bottle-less coolers to reduce wasted water and ensure drinking water quality.</p>	

Resources

- Responsible Purchasing Network, [Responsible Purchasing Guide Bottled Water Alternatives](#)
- Agriculture and Agri-Food Canada, [The Canadian Bottled Water Industry](#)
- Health Canada, [The Safety of Bottled Water](#)
- [Pacific Institute](#)
- Polaris Institute, [From Cradle to Grave: The Environmental Footprint of Bottled Water](#)
- [The Catch Behind Coca-Cola's Switch to Plant-based Bottles](#), Greenbiz.com
- Region of Peel, [Myths about Tap Water](#)

Food and Catering Services

What are the key green issues?

» **Resource Use and Greenhouse Gas Emissions:** Food service operations are among the most energy and water intensive of all the commercial sectors.

- **Food:** The industrial agriculture system contributes between 17 percent and 32 percent of all human induced greenhouse gas emissions. The livestock sector generates 14.5 percent of the world's GHG emissions. A quarter of the world's agricultural land is required for the production of animal feed.
- **Food Service Ware:** A large portion of conventional single serve food ware materials are made from expanded polystyrene (EPS) foam, which is derived from petroleum, a limited (and often imported) natural resource.

» **Pollutants and Toxins:**

- **Food:** One-crop monoculture reduces soil productivity and requires massive irrigation and application of fertilizers. Excessive uses of pesticides in industrial farming have polluted waterways and affected wildlife and have resulted in many negative human health effects.
- **Disposable Food Service Ware:** Styrene, which is found in many foam food ware products, is a potential human carcinogen and neurotoxin that can leach into food and be consumed by food ware users.

» **Waste:**

- **Food Waste:** About 40 percent of all the food produced in Canada goes to waste, amounting to about \$27 billion a year—more than the value of all the food purchased by Canadians in restaurants in 2009.
- **Food Service Ware Waste:** Because food service ware is usually heavily contaminated with food residue after it is used, it is difficult to recycle.

Food and catering services are food related services provided outside the home, e.g. for meetings, events or functions in office environments or meals provided in schools, universities or hospitals. Catering services can range from lunch drop-off to full food service catering, including reusable and un-reusable service ware.



How do sustainable food and green food ware advance Government's strategic priorities?

✓ Reducing Energy, Resource Use and Toxins

Food: Purchasing food produced through sustainable farming methods which protects the soil and keeps the land fertile for an extended period of time, ensures adequate diversity and resistance to pests and diseases, and reduces water use through the capturing and conservation of rainwater. Procurement of sustainable food contributes to achievement of existing building certifications such as LEED Canada for Existing Buildings: Operations and Maintenance (EBOM). [LEED EBOM](#) includes requirements for the sustainable purchasing food and beverages by catering services hired or controlled by building management.

✓ Reducing Unnecessary Waste

Food service ware: The best way to reduce waste is to avoid generating it in the first place. Thus, buying and using durable service ware is the best way to achieve this. If that is not possible, replacing conventional disposable service ware with compostable service ware will reduce landfill waste and chemicals leaching into the environment.

Improving Health: Recent studies show increased mineral content in organic foods significantly increased levels of Vitamin C, iron, magnesium and phosphorous.

Myth Buster

While there may not be huge differences in the nutrients found in organic compared to conventional vegetables, according to a report by the American Academy of Pediatrics (AAP) there are major health advantages to eating food produced with fewer pesticides, especially for young children who are especially vulnerable to chemical exposures.


Recommended	Why is it important?	How do I know I am getting it?
FOOD AND BEVERAGES		
<p>✓ Seek food and beverages provided in catering services that are Canada Organic or US Certified Organic</p>	<p>An organic agriculture system only uses methods to produce food and beverages that preserve the environment and avoid most synthetic materials, such as pesticides and antibiotics, thus improving soil and water quality and reducing GHG emissions.</p>	<p>Food products (crops, livestock, processed products, wild products) must be certified by:</p> <p>The Canada Organic Regime, which gives assurance on the production of high quality food using sustainable management practices, which avoid damage to the environment, and ensure the ethical treatment of livestock.</p> <p>The USDA Organic Seal, which gives assurance that food was grown and produced while:</p> <ul style="list-style-type: none"> • Preserving natural resources and biodiversity • Supporting animal health and welfare • Only using approved materials • Not using genetically modified ingredients
<p>✓ Seek fish/seafood that is certified by the Marine Stewardship Council Blue Ecolabels</p>	<p>MSC certified fisheries show improvements that deliver benefits to the marine environment, including increased stocks; improved management of stocks; reduced by-catch; expansion of environmentally protected areas; and increased knowledge about ecosystem impacts amongst fishers.</p>	<p>The Marine Stewardship Council gives assurance that fish and seafood products come from a fishery that meets the MSC Environmental Standard for Sustainable Fishing, and reduces the environmental impacts of fishing, including ensuring sustainable fish stocks and limiting bycatch.</p>
<p>✓ Seek out food that is procured locally (local degrees: 300 miles radius, Newfoundland and Labrador, Maritime region)</p>	<p>On average, conventionally produced food is estimated to travel 1,500 miles. Buying local food can have environmental benefits, such as reduced greenhouse gas emissions from transportation. The definition of “local” varies among institutions, but generally means food sourced within a province, region, or radius of up to 300 miles.</p>	<p>Direct farm-to-institution programs and purchasing from farmer cooperatives allow for direct communication between farmers and food buyers.</p> <p>Facilities that contract out their food service operations can use their contracts to build in requirements for local and sustainable food, and initiate dialogue with contractors regarding ways they might be able to partner in identifying their more sustainable goods and services.</p> <p>Some food service distributors work with multiple local farmers in order to supply diverse local foods.</p>

Recommended	Why is it important?	How do I know I am getting it?
FOOD SERVICE WARE		
<p>✓ Choose reusable food service ware where appropriate</p>	<p>Durables, such as metal forks, plates, cups and glassware can reduce long term cost and landfill waste but must be washed and stored.</p>	<p>Depends on whether the location allows for reusable food service ware, e.g. because of sufficient storage space and dishwashing capacity.</p>
<p>✓ Where reusable food service ware is not practical, choose compostable food service ware certified by ECOLOGO, or the Biodegradable Products Institute (BPI). Products made of 100 percent paper or wood, that are uncoated, unlined, or clay-coated (such as wooden stir sticks or uncoated paper plates) are considered commercially compostable without a certification</p>	<p>Food ware that can be commercially composted can significantly reduce waste. Many of the certifications for compostable food service ware apply only to products that contain biobased plastics. For compostable food service ware that is made of paper or wood, or other fibre without the use of any biobased plastic, see below.</p>	<div data-bbox="1150 483 1276 618" data-label="Image"> </div> <p>ECOLOGO™ gives assurance on food containers that are made of agricultural waste, are devoid of chemicals of concern (such as heavy metals and fluorinated compounds), and are verified to be readily biodegradable. Check with the supplier whether the food ware product is “commercially compostable” and verify that ECOLOGO products are accepted as commercially compostable by your facility,</p> <div data-bbox="1129 727 1304 800" data-label="Image"> </div> <p>The Compostable logo by the Biodegradable Products Institute (BPI) gives assurance that food service products biodegrade quickly, completely and safely, when composted in well-run municipal and commercial facilities without any plastic residues.</p>
<p>✓ Food service ware made of uncoated wood or paper (paper plates, wood sticks) are certified totally chlorine Free by the chlorine Free Products Association and have at least 10 percent post consumer or 25 percent post-industrial recycled content</p>	<p>Chlorine bleaching creates a by-product called dioxin, which has extremely harmful effects on the environment and has been linked to ill health. Dioxin is a known carcinogen and will leave detectable residuals in any product that has been bleached with any type of chlorine bleach.</p>	<div data-bbox="1123 906 1304 1068" data-label="Image"> </div> <p>The totally Chlorine Free label by The Chlorine Free Products Association label gives assurance that products were bleached using a totally chlorine free process, one which uses an oxygen process, normally hydrogen peroxide.</p>

Recommended	Why is it important?	How do I know I am getting it?
FOOD SERVICE WARE		
<p><input checked="" type="checkbox"/> Biobased content</p>	<p>By requiring a minimum percentage of biobased (plant based) content (Biobased carbon content is typically measured as a percentage of total carbon content), purchasers can avoid inadvertently purchasing compostable food service ware made largely of petroleum-based material.</p>	<div data-bbox="1108 354 1285 440" data-label="Image"> </div> <p>The USDA Biobased Certified label by the USDA assures that:</p> <ul style="list-style-type: none"> • Disposable tableware (e.g., plates, bowls, cups, etc.) has 72 percent minimum biobased content • Disposable containers (e.g., disposable clamshells, boxes and soup containers) have 72 percent minimum biobased content • Disposable cutlery (e.g., spoons, forks, knives, “sporks”, etc.) have 48 percent minimum biobased content
<p><input checked="" type="checkbox"/> Product may not contain perfluorinated grease barrier compounds</p>	<p>They are likely to be carcinogenic.</p>	<p>Bidders shall provide affidavits from manufacturer, guaranteeing that perfluorinated compounds were not used or added as the product was made.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Increase energy efficiency in food service operations by:</p> <ul style="list-style-type: none"> • Avoiding purchasing frozen food to reduce energy used for refrigeration • Conducting regular maintenance procedures for all kitchen appliances, HVAC systems and lighting fixtures • Purchasing ENERGY STAR rated appliances and lighting 	<p>Food service operations are the most intensive energy users in the commercial sector in terms of British thermal units (BTUs) per square foot, mostly due to inefficient appliances and wasteful habits.</p>	 <p>Verify with your food service providers that frozen food is kept to a minimum. The ENERGY STAR ecolabel is the most common third-party standard for energy efficient appliances in Canada. The ENERGY STAR Most Efficient designation identifies and advances products in the marketplace in a number of categories and recognizes the most efficient products among those that qualify for the ENERGY STAR symbol.</p>
<p>Reduce the amount of meat served</p>	<p>Meat consumption is a major contributor to GHG emissions and environmental degradation. Cows, for example, emit between 2.5 and 4.7 ounces of methane for each pound of beef they produce. As methane has roughly 23 times the global-warming potential of CO₂, those emissions are the equivalent of releasing between 3.6 and 6.8 pounds of CO₂ into the atmosphere for each pound of beef produced. Serving less meat can significantly reduce environmental impacts. Serving only vegetarian options once per week can spare about 170 kg CO₂ emissions per person per year.</p>	<p>Verify with your food service providers that a range of vegetarian options are offered besides meat. Encourage the introduction of a meat free day, e.g. on Fridays.</p>
<p>Compost (on/or offsite)</p>	<p>Food and other organic materials can be diverted from the waste stream by establishing a composting program that provides organic materials for farms or landscaping operations.</p>	<p>Verify with your food service provider that they have an organics collection system in place and organic materials collected are delivered to a composting facility and used to create compost in accordance with all requirements set out by provincial legislation.</p>

Recommended	Why is it important?	How do I know I am getting it?
Expand compostable items beyond food service ware	Consider adding compostable napkins, gloves, wraps, hairnets, and other related products to contract to reduce waste and resource use. Strive to make as many items in the food service areas compostable.	Verify with your compostable food service ware provider if they can deliver additional related products. For contracted food service operators, specify in the contract that they use compostable napkins, wraps, gloves etc.
Offer trayless dining	According to a study of 25 food service institutions conducted by Aramark, eliminating serving trays reduces per person waste by 25-30 percent per tray per meal.	Verify with your supplier trayless dining options.
Product packaging will contain post-consumer recycled content	Will reduce waste and use of virgin materials.	Verify with your supplier that product packaging contains post-consumer recycled content.

Resources

- Responsible Purchasing Network, Responsible Purchasing Guide Food Services
- Responsible Purchasing Network, [Green Purchasing Opportunities: Compostable Food Service Ware](#)
- Edmonton Journal, [Canadians Trash \\$27 Billion Worth of Food a Year](#)
- Tackling climate change through livestock — a global assessment of emissions and mitigation opportunities, Food and Agriculture Organization of the United Nations
- Scientific American, [How Meat Contributes to Global Warming](#)

Vehicle Consumables

What are the key green issues?

- » **Resource use and Greenhouse Gas Emissions:**
 - **Fluids:** Oils, lubricants, and antifreeze that disperse in the air or are improperly disposed of (e.g. poured into the sewer) enter into the biosphere, break down, and lead to the accumulation of CO₂ or phosphorus.
 - **Tires:** The manufacture of a new light-duty tire requires 26 to 30 litres of oil. Ninety-five percent of a tire's energy consumption occurs during use.
- » **Pollutants and Toxins:**
 - **Tires:** Process emissions include volatile organic compounds (VOCs) and hazardous air pollutants (HAPs), and are most problematic with large-scale facilities.
- » **Water Pollution:**
 - **Tires:** Zinc is one of the most significant pollutants resulting from rubber processing and is released largely due to improper housekeeping in processing facilities and disrupts drinking water and aquatic ecosystems.

Myth Buster

Used engine oil is not inferior to standard motor oil. Unlike any other used product that tends to degrade because of use and contaminants like dirt or water, the base oil in used engine oil doesn't degrade, only the additives. The base oil is extracted from the refining processes done in factories. Once that is done, additives are introduced to the finished product.

Vehicle consumables are goods that need to be regularly replaced because they wear out or are used up, as the vehicle is used over time. They include, but are not limited to, oil filters, windshield wiper blades, power steering fluid, transmission fluid, tires and air filters. For the purposes of this factsheet, we limit vehicle consumables to vehicle fluids such as oils and lubricants, coolants, and antifreeze, as well as tires.



How do greener vehicle consumables advance Government's strategic priorities?



✓ Reducing Energy, Resource Use and Toxins

Tires: Improved tire design and proper inflation reduces rolling resistance and leads to direct improvements in fuel economy and thus cost savings.

Fluids: The fluids required to maintain and operate vehicles (such as lubricants, oils and antifreeze) substituting materials within these fluids to more nature-like substances reduces negative environmental impacts. Recycling and re-using engine oil helps preserve crude oils. It takes around 3.7 litres of used oil to create around 2.3 litres of engine oil compared to about 155.4 litres of crude oil needed to the same 2.3 litres.

✓ Reducing Unnecessary Waste

Tires: Used tires should be disposed of properly, typically directed to the scrap tire market where they can be recycled into other useful products or burned in combustion turbines for energy recovery. Newfoundland and Labrador has a Used Tire Recycling Program for tires from all passenger vehicles, to light and medium trucks that allows used tires to be returned to any tire retailer or other designated locations, at no cost.

Recommended	Why is it important?	How do I know I am getting it?
FLUIDS		
<p>✓ Look for re-refined automotive engine oils certified by Green Seal</p>	<p>Re-refined motor oil is recovered from used product and rejuvenated for reuse as an alternative to “virgin” oil products, thus reducing resource use. Buying re-refined motor oils also reduces the upstream land-use challenges associated with finding and producing crude oil.</p>	<p> The Green Seal™ Standard for Re-refined Engine Oil gives assurance that products adhere to environmental health requirements such as re-refined oil content, reduced toxicity of additives and reduced toxicity in packaging.</p>
<p>✓ Ensure that service maintenance garages use re-refined and recycle used oil</p>	<p>Using re-refined oil reduces resource use.</p>	<p>Assurance from collection companies of final use for used materials and verification of the same.</p>
<p>✓ Look for vegetable based lubricants</p>	<p>In North America, the majority of vegetable-based oils are derived from renewable soy and canola, thus avoiding many of the upstream pollution effects from crude oil extraction and refining. They also have low volatile organic compound (VOC) emissions.</p>	<p>Check with your supplier for availability of vegetable based lubricants. They may be more expensive due to higher raw material costs. Initial purchasing costs however can be offset when considering that end-users often use less of them per application and that their use may result in reductions in environmental and safety penalties in case of spills, parts wear, maintenance costs and disposal fees.</p>
<p>✓ Look for glycol free antifreeze and engine coolants certified by ECOLOGO™</p>	<p>Is toxin free, thus reducing health risks and environmental impact.</p>	<p> Product is certified by ECOLOGO™, assuring reduced health and environmental impacts.</p>

Recommended	Why is it important?	How do I know I am getting it?
TIRES		
<p>✓ Purchase of low rolling resistance (LRR) tires (an RRC of less than 0.0105) in accordance with SAEJ1269 and/or purchase of retread, i.e. remanufactured tires</p>	<p>LRR tires have less resistance in rolling and help improve the vehicles fuel economy. 1.5–4.5 percent savings are possible for high rolling resistance tires.</p> <p>Buying retread tires saves up to 70 percent of the oil and materials needed to make a new tire.</p>	<p>LRR tires come standard on most new vehicles but they are not typically manufactured or marketed as replacement tires. The primary measure of tire rolling resistance is the “rolling resistance coefficient”, or RRC. Request an RRC of less than 0.0105 in your bidding document and ask bidders to disclose their RRC in accordance with SAEJ1269 (one of The Society of Automotive Engineer’s procedures for measuring tire rolling resistance).</p> <p>Specify for replacement tires with characteristics that tend to reduce rolling resistance, such as:</p> <ul style="list-style-type: none"> • Larger rim diameter • Shallower tread • Lower speed rating
<p>✓ Use of lead-free wheel weights, e.g. steel wheel weights</p>	<p>Around 4.5 ounces of lead are clipped onto the tires of a typical car for wheel balancing. Dropped lead from wheel weights exposed to air, water, vehicle and foot traffic may degrade into fine particulates posing risks to exposed individuals for brain and kidney damage.</p>	<p>Lead-free wheel weights come standard on many new vehicles. Ask the dealer to verify the lead free status of wheel weights.</p>
<p>✓ Proper disposal of tires to retreaders or the scrap market</p>	<p>Ensures that tires don’t end up in the landfill.</p>	<p>Verify with your Used Tire Recycling Program that returned tires are properly disposed of and re-directed to re-treaders.</p>
<p>✓ Proper disposal of lead weights to a reprocessing facility</p>	<p>Ensures that lead weights, which are toxic don’t end up in the landfill and impact water systems.</p>	<p>Verify with your Used Tire Recycling Program that lead weights of collected tires are directed to reprocessing facilities.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
<p>Proper inflation, tire rotation, inspection during inflation check and alignment, and monitoring of rated and actual fuel economy of vehicles on which the tires are mounted</p>	<p>Maintaining correct tire inflation pressure helps optimize tire performance, reduces rolling resistance and increases fuel economy.</p>	<p>Make sure that regular tire inflation checks are part of fleet management operations. Ensure that regular fuel economy measurements are integrated into fleet management.</p>
<p>Consider expanding oil change intervals</p>	<p>Many vehicle owner manuals are still recommending changing your oil every 5,000 kms; however with today's modern oil and engine technology intervals can be as much as 10,000 kms.</p>	<p>Verify with your maintenance service provider when oil changes are really necessary.</p>

Resources

- Responsible Purchasing Network, [Responsible Purchasing Guide Light-Duty Fleet Vehicles](#)
- Responsible Purchasing Network, [Responsible Purchasing Guide Tires & Wheel Weights](#)
- [City of Richmond Environmental Purchasing Guide](#)
- Resort Municipality of Whistler, Sustainable Purchasing, [Product Assessments. Oils & Lubricants](#)