

# Survey of Environmental Protection Expenditures, 2012

**Confidential when completed.**

*Si vous préférez ce questionnaire en français, veuillez nous appeler au numéro sans frais suivant: 1-866-445-4323.*

Please provide a company e-mail address.

0009 Email address

Please verify the business name, address and contact name, and correct where needed.

0001 Company name

0002 Establishment name

0021 C / O

0004 Address

0005 City

0006 Province/Territory

0007 Postal code

## Introduction

This information is collected under the authority of the *Statistics Act, Revised Statutes of Canada, 1985, Chapter S-19.*  
**COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THIS ACT.**

### Purpose of the survey

This survey provides a measure of the expenditures made by industry for environmental protection in Canada in response to Canadian and international environmental regulations, conventions and voluntary agreements. The survey also aims at identifying environmental management practices and technologies used in Canadian industry for the purpose of preventing or abating pollution. These data will be aggregated with information from other sources to produce official estimates of environmental protection expenditures. Your information may also be used by Statistics Canada for other statistical and research purposes.

The results of this survey will be published in the Statistics Canada publication *Environmental Protection Expenditures in the Business Sector, 2012*, Catalogue No. 16F0006XIE.

For more information on this survey, please access [www.statcan.gc.ca](http://www.statcan.gc.ca).

### Confidentiality

The *Statistics Act* protects the confidentiality of information collected by Statistics Canada. Statistics Canada is prohibited by law from releasing any information it collects which could identify any person, business, or organization, unless consent has been given by the respondent or as permitted by the *Statistics Act*. Statistics Canada will use the information from this survey for statistical purposes.

### Fax or e-mail transmission disclosure

Statistics Canada advises you that there could be a risk of disclosure during the transmission of information by facsimile or e-mail. However, upon receipt, Statistics Canada will provide the guaranteed level of protection afforded all information collected under the authority of the *Statistics Act*.

### Inquiries

If you require assistance in completing this questionnaire or if you have any questions or comments regarding this survey, please refer to the Guide to Definitions and Classification Details found at the end of this questionnaire or contact:

#### Statistics Canada

Telephone (toll-free): **1-866-445-4323**

E-mail: [enviro-oid-exp@statcan.gc.ca](mailto:enviro-oid-exp@statcan.gc.ca)

In all correspondence concerning this questionnaire, please quote the identification number that appears on the address label.

### Record linkages

To enhance the data from this survey, Statistics Canada may combine it with information from other surveys or from administrative sources.

### Coverage

Please include in this questionnaire the data for the establishment identified above.

### Important :

Please read the Guide to Definitions and Classification Details included at the end of this form before answering. If your response for an item is zero, please write "0" in the corresponding box rather than leaving the cell blank.

**Please return the completed questionnaire to Statistics Canada in the enclosed envelope within 30 days of receipt.** If you are unable to do so, kindly inform our office of the expected completion date.



### 3. Pollution abatement and control (end-of-pipe) processes

Abatement and control of pollution are performed by using end-of-pipe equipment or installations. **These end-of-pipe processes treat pollutants after they are produced and are not an integral part of production;** their sole purpose is to abate or to control undesirable substances resulting from normal production. Refer to page 14 of this questionnaire for more information.

Do not include waste management or sewerage-related expenditures reported in Question 2.

#### 3.1 Pollution abatement and control expenditures

If the expenditure is zero, please write "0" in the corresponding box.

Include:

- ◆ Expenditures for equipment or facilities that are separately identifiable and that have been installed exclusively to reduce or eliminate pollutants resulting from production

Exclude:

- Expenditures specific to workers' health and safety
- Expenditures on waste management already reported in Question 2
- Expenditures on sewage treatment or services already reported in Question 2

Operating expenses	Capital expenditures	TOTAL
250 \$ <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	+ \$ 260 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	= \$ 270 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

#### 3.2 Did you report capital expenditures in Question 3.1 (cell 260)?

275 1  Yes 3  No → Go to Question 3.3



What proportion of capital expenditures reported in Question 3.1 (cell 260) was spent on reducing or abating each of the following?

Refer to page 14 of this questionnaire for more information.

Substances released to air	Substances released to surface waters	On-site releases to land/underground injection	Noise, vibration or radiation
280 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 290 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 300 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 310 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> % = <b>100</b> %

#### 3.3 Did you report operating expenses in Question 3.1 (cell 250)?

0315 1  Yes 3  No → Go to Question 4



What proportion of operating expenses reported in Question 3.1 (cell 250) was spent on reducing or abating each of the following?

Refer to page 14 of this questionnaire for more information.

Substances released to air	Substances released to surface waters	On-site releases to land/underground injection	Noise, vibration or radiation
0320 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 0330 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 0340 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %	+ 0350 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> % = <b>100</b> %

#### 4. Pollution prevention

“Pollution prevention is the use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, and reduce overall risk to human health or the environment. Pollution prevention is the elimination or minimization of pollutants and waste before they are created.”

*Pollution Prevention - A Federal Strategy for Action, Government of Canada (1995)*

This question identifies expenditures and methods used for the purpose of preventing or minimizing pollution and waste, or promoting resource conservation. *Refer to page 14 of this questionnaire for more information.*

##### 4.1 Pollution prevention methods

If you prevented or reduced waste, pollutants or conserved resources in your fiscal year 2012, please indicate how it was achieved by checking the appropriate box(es). *Refer to page 15 of this questionnaire for a description of each method.*

		Yes		No
<b>Product design or reformulation</b>				
Reformulating or redesigning end products to be non-toxic or less polluting upon use, release or disposal .....	810	1	<input type="radio"/>	3 <input type="radio"/>
<b>Equipment or process modifications (integrated process)</b>				
Upgrading or replacing production unit equipment or methods .....	830	1	<input type="radio"/>	3 <input type="radio"/>
<b>Recirculation, on-site recycling or reuse or recovery of materials or substances</b> .....				
	850	1	<input type="radio"/>	3 <input type="radio"/>
<b>Materials or feedstock substitution, solvent reduction, elimination or substitution</b>				
Changing the raw materials of products to use non-toxic or less polluting raw materials .....	870	1	<input type="radio"/>	3 <input type="radio"/>
<b>Improved inventory management or purchasing techniques</b>				
Integrating environmental considerations into existing and new purchasing practices, as well as into inventory management systems .....	875	1	<input type="radio"/>	3 <input type="radio"/>
<b>Prevention of leaks and spills</b> .....	880	1	<input type="radio"/>	3 <input type="radio"/>
<b>Good operating practices or pollution prevention training</b>				
Modifying existing equipment or methods by such steps as improved housekeeping, system adjustments, or process/product inspections .....	885	1	<input type="radio"/>	3 <input type="radio"/>
<b>Other (Please specify)</b> .....	890	1	<input type="radio"/>	3 <input type="radio"/>

0891

0892

0893

## 4.2 Expenditures on pollution prevention

If the expenditure is zero, please write "0" in the corresponding box.

### Include:

- ◆ Expenditures for equipment or facilities integrated in a production process that avoid or minimize the production of pollutants and waste
- ◆ Expenditures for equipment or facilities related to leak and spill prevention. They may include expenditures on the following: spill containments; dyke extensions; and accessories (valves, pumps)
- ◆ Expenditures for equipment or facilities used for conserving energy or water
- ◆ Expenditures for equipment or facilities associated with recirculation, recovery, reuse and on-site recycling of materials or substances
- ◆ Expenditures related to operational or process changes aimed at pollution prevention. Examples include product re-design (e.g., feedstock/raw material substitution), good operating practices (e.g., modification of process, staff training), etc.

### Exclude:

- Expenditures specific to workers' health and safety
- Expenditures already included in Question 2

Operating expenses	Capital expenditures	TOTAL																																																														
500 \$	510 \$	520 \$																																																														
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## 4.3 Did you report capital expenditures in Question 4.2 (cell 510)?

525    1     Yes    3     No    →    Go to Question 4.4



What proportion of capital expenditures reported in Question 4.2 (cell 510) was spent on preventing or minimizing each of the following? Refer to page 15 of this questionnaire for more information.

Substances released to air	Substances released to surface waters	On-site releases to land/underground injection	Noise, vibration or radiation	Other																																																																																																															
530	540	550	560	570																																																																																																															
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## 4.4 Did you report operating expenses in Question 4.2 (cell 500)?

0575    1     Yes    3     No    →    Go to Question 5



What proportion of operating expenses reported in Question 4.2 (cell 500) was spent on preventing or minimizing each of the following? Refer to page 15 of this questionnaire for more information.

Substances released to air	Substances released to surface waters	On-site releases to land/underground injection	Noise, vibration or radiation	Other																																																																																																															
0580	0590	0600	0610	0620																																																																																																															
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**8. Protection and restoration of wildlife and habitat**

*If the expenditure is zero, please write "0" in the corresponding box.*

**Include:**

- ◆ Expenditures made to protect or restore wildlife and habitat that could be or have been adversely affected by this establishment's operations

**Exclude:**

- Expenditures for site reclamation and decommissioning which are already reported in Question 7
- Expenditures for aesthetic purposes

Operating expenses	Capital expenditures	TOTAL
190 \$ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	+ \$ 200 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	= \$ 210 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

**9. Environmental charges**

*If the expenditure is zero, please write "0" in the corresponding box.*

**Include:**

- ◆ Permits, fees, levies, special assessments and related fees
- ◆ Any fines, penalties, or damage awards paid to government agencies or to individuals
- ◆ Other charges paid to regulating bodies in order to allow operations to take place at this establishment

**Operating expenses**

760  
\$

**What proportion of the operating expenses, above, was spent on each of the following?**

1. Permits, fees, levies, special assessments and related fees .....	0761	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
2. Any fines, penalties or damage awards paid to government agencies or individuals, or other charges paid to regulating bodies in order to allow operations to take place at this establishment .....	0762	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %

**10. Other environmental protection expenditures**

*If the expenditure is zero, please write "0" in the corresponding box.*

**Include:**

- ◆ The operating costs of administrating your environmental program not included elsewhere
- ◆ Environmental training and information programs not included elsewhere
- ◆ Any other additional expenditures not included elsewhere that are required to comply with environmental regulations, conventions or voluntary agreements

**Exclude:**

- Research and development expenditures

Operating expenses	Capital expenditures	TOTAL
770 \$ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	+ \$ 0771 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	= \$ 0772 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>





**12. Renewable energy technologies**

*If the expenditure is zero, please write "0" in the corresponding box.*

**Did you invest in renewable energy technologies in your fiscal year 2012?**

*Refer to page 15 of this questionnaire for more information.*

1001    1     Yes                    3     No    ➔    Go to question 13



**Please indicate your capital expenditures in your fiscal year 2012 for each of the following:**

**Renewable energy source:**

1. Small, mini- and micro-hydroelectric facility .....
2. Solar energy systems or equipment .....
3. Wind energy systems or equipment .....
4. Biomass energy (e.g., energy crops and waste-to-energy) .....
5. Geothermal .....
6. Other renewable energy systems or equipment .....

Renewable energy is energy obtained from natural resources that can be naturally replenished or renewed within a human lifespan, that is, the resource is a sustainable source of energy.

*Please specify*

1011 \_\_\_\_\_

1012 \_\_\_\_\_

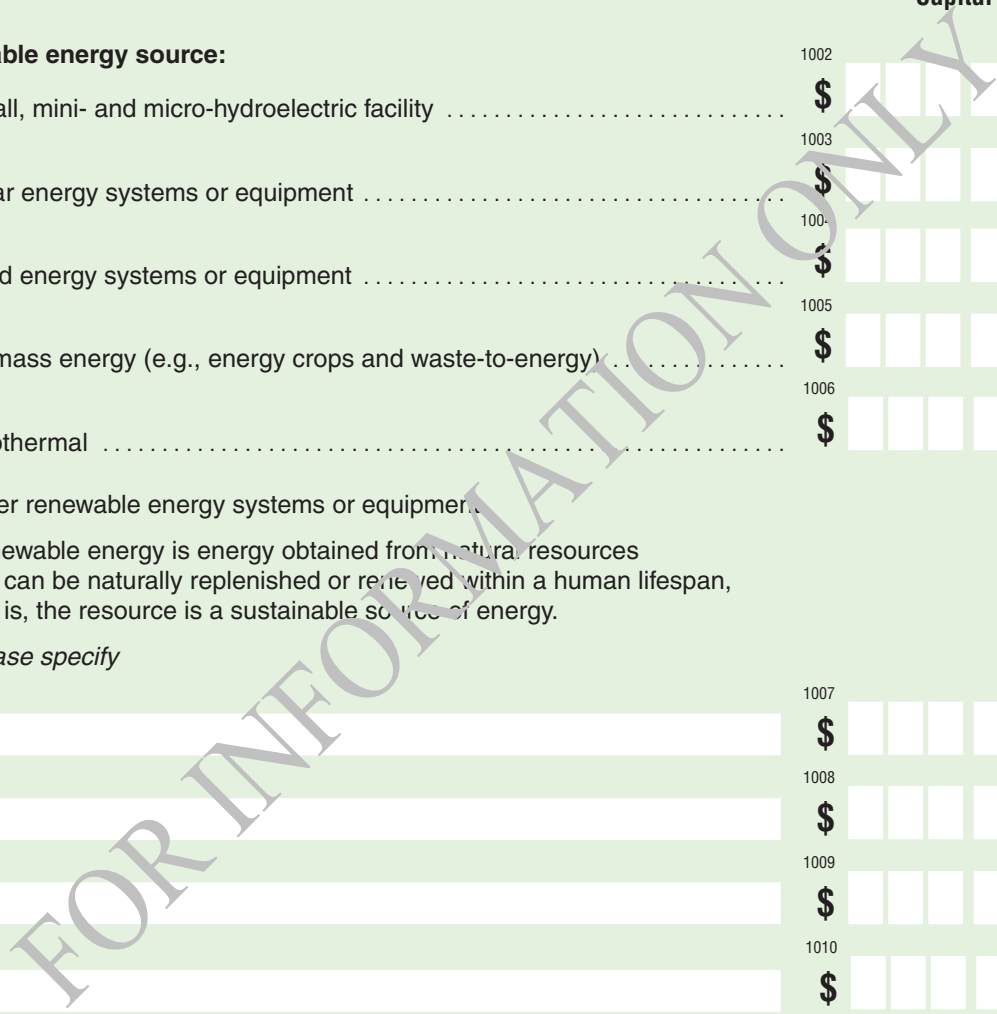
1013 \_\_\_\_\_

1014 \_\_\_\_\_

7. **Total** .....

**Capital expenditures**

1002	\$																		
1003	\$																		
1004	\$																		
1005	\$																		
1006	\$																		
1007	\$																		
1008	\$																		
1009	\$																		
1010	\$																		
1020	\$																		



### 13. Environmental management practices

Please indicate the environmental management practices adopted or utilized by this establishment in your fiscal year 2012 to avoid or minimize pollution or to conserve resources. Refer to page 16 of this questionnaire for a description of each practice.

		Yes	No
1. Did this establishment use an environmental management system? . . . . .	951	1 <input type="radio"/>	3 <input type="radio"/>
2. Did this establishment use Life Cycle Management, Life Cycle Assessment or Design for Environment for decision making? . . . . .	965	1 <input type="radio"/>	3 <input type="radio"/>
3. Is this establishment certified under the ISO 14000 family of environmental management standards? . . . . .	953	1 <input type="radio"/>	3 <input type="radio"/>
4. Did this establishment develop and implement a pollution prevention plan? . . . . .	970	1 <input type="radio"/>	3 <input type="radio"/>
5. Did this establishment implement any environmental voluntary agreement or did it participate in any voluntary environmental program? . . . . .	955	1 <input type="radio"/>	3 <input type="radio"/>
<p>Examples include Environmental Performance Agreements (EPAs), Canadian GHG Reductions Registry© or Canadian Industry Program for Energy Conservation. <i>If yes, please list programs, accords or agreements.</i></p>			
0976	<input type="text"/>		
0977	<input type="text"/>		
0978	<input type="text"/>		
6. Did this establishment have a "green" procurement policy? . . . . .	957	1 <input type="radio"/>	3 <input type="radio"/>
7. Were any of the goods produced by this establishment certified by an environmental program, such as the "Enviro Choice Program" or Ecologo? . . . . .	959	1 <input type="radio"/>	3 <input type="radio"/>
8. a) Did this establishment have an environmental supply chain management policy? . . . . .	0972	1 <input type="radio"/>	3 <input type="radio"/>
b) Was this establishment impacted by the environmental supply chain management policy in place at a supplier or client business? . . . . .	0973	1 <input type="radio"/>	3 <input type="radio"/>
9. Did this establishment use an energy management or monitoring system(s) to improve efficiency? . . . . .	2032	1 <input type="radio"/>	3 <input type="radio"/>
10. Did this establishment perform an energy audit in the last three years (2010-2012)? . . . . .	2033	1 <input type="radio"/>	3 <input type="radio"/>

11. Did this establishment take advantage of any Canadian federal or provincial/territorial government environmental incentive programs, grants, loans, or tax credits during the 2012 fiscal year? . . . . . 0974

Yes No

1  3

Examples include ecoENERGY Retrofit program, or Accelerated Capital Cost Allowance for energy efficiency and renewable energy sources.  
If yes, please specify the incentive programs, grants or loans.

0979

0980

0981

12. Did this establishment perform a greenhouse gas emissions inventory in 2012? . . . . . 1015

1  3

13. Did this establishment participate in any form of carbon-trading or purchase/sell carbon-offset credits in 2012? . . . . .

1  3

14. Other environmental management practices (Please specify) . . . . . 967

1  3


0982

0983

0984

**Certification**

I certify that to the best of my knowledge, the information provided in this questionnaire is correct and complete.

Name of person completing this questionnaire 0026 1 <input type="radio"/> Mr. 2 <input type="radio"/> Mrs. 3 <input type="radio"/> Miss 4 <input type="radio"/> Ms	Signature  <input type="text"/>
---	---

Last name 0054 <input type="text"/>	First name 0013 <input type="text"/>
--	---

Title 0014 <input type="text"/>	Telephone number 0017 <input type="text"/>	Ext. number 0027 <input type="text"/>
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E-mail address 0018 <input type="text"/>	Fax number 0016 <input type="text"/>
---	---

Website address 0020 <input type="text"/>	Date 0015 <input type="text"/> Year <input type="text"/> Month <input type="text"/> Day <input type="text"/>
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Approximately how long did it take to collect the data and complete this survey? 9910  hour(s) 9909  minutes

In the future, would you prefer to receive this survey in electronic format? 862 1  Yes 3  No

## Comments

We invite your comments or suggestions on the following or any other topics related to the Survey of Environmental Protection Expenditures. We appreciate your assistance.

- Questionnaire content
- New questions of interest to your industry
- Clarity of questions and provision of sufficient examples
- Order and flow of questions
- Timing of receipt of questionnaire and the period given for response
- Alternative sources of information to further reduce response burden
- Potential for electronic data reporting

9920

9913

9914

FOR INFORMATION ONLY

If you have any questions, please contact us.

Telephone (toll free) 1-866-445-4323

Fax: 1-888-883-7999 (within Canada)

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Please return this  
questionnaire in the  
envelope provided

**Thank you for your cooperation !**

# **Guide to Definitions and Classification Details**

## **Establishment**

An establishment is defined as the most homogeneous unit of production for which a business maintains accounting records. From these accounting records, it is possible to assemble all the data elements required to compile the total sales or shipments, inventories, cost of materials and services, labour and capital used in production.

## **Environmental protection expenditures**

Environmental protection expenditures are defined as all operating expenses and capital and repair expenditures that are incurred in order to anticipate or to comply with Canadian or international environmental regulations, conventions or voluntary agreements. They consist of expenditures for pollution prevention, abatement and control, expenditures for protecting and restoring wildlife and habitat, expenditures for environmental monitoring, environmental assessments and audits, and expenditures for reclamation and decommissioning of sites. **Environmental protection expenditures incurred that are not in response to current or anticipated Canadian or international regulations, conventions or voluntary agreements should be excluded. In addition, expenditures to improve employee health, workplace safety and site beautification should also be excluded.**

Expenditures to produce pollution prevention, abatement and control equipment for sale are also excluded as they would appear twice in the expenditure data produced by Statistics Canada. Expenditures for environment-related research and development are also excluded since they are collected elsewhere in Statistics Canada.

**Environmental conventions or voluntary agreements** refer to any formal, multi-party commitment by an industry or an industry association for instance, to meet specific targets in terms of habitat protection, waste reduction, or the elimination or reduction of specific materials that are considered to be harmful or toxic to the natural environment in Canada. Examples include the following: the Canada-U.S. Air Quality Agreement; the "Responsible Care" program from the Canadian Chemical Producers Association; the Canadian GHG Reductions Registry®; etc.

**Environmental regulations** refer to any current Canadian federal, provincial or municipal law or international legislation that is intended to protect or to restore the environment in Canada. Expenditures related to anticipated legislation may be included as long as its provisions are known.

## **How to report**

Please report expenditures in **Canadian dollars for your 2012 fiscal year**. If, for certain categories, no expenditures have been incurred, **please write "0" in the corresponding box. Do not leave the box blank**. Where precise data are not available, your best estimate is acceptable. If additional information is available in an annual report or an environmental performance report, **please include a copy** when you return the questionnaire.

## **To report capital expenditures**

**Include** all relevant outlays for machinery and equipment and their installation and repair that have been capitalized, as well as for the construction of non-residential facilities (contractors or own employees). For construction, include all costs associated with demolition, planning and design (such as engineering and consulting fees), any materials supplied to construction contractors for installation and any costs associated with the purchase of land that are neither amortized nor depreciated.

**Exclude** any provisions for future environmental liability.

## **To report operating expenses**

**Include** all expenses related to environmental protection incurred for labour, materials and supplies, maintenance and repair, and purchased services (include fuel and electricity expenses for machinery and equipment whose sole purpose is to protect the environment).

**Exclude** depreciation on machinery and equipment.

### **For logging activities**

Use Question 8 to report additional expenditures for logging caused by environmental regulation or convention. **Include** the extra cost of any practice that would not otherwise be followed in the absence of environmental regulation or convention. **Exclude** the foregone revenues resulting from regulations or conventions that reduce the allowable harvest.

### **For mining activities**

Use Question 3 to report any expenditures that are related to the handling and treatment of mine tailings and that are required by environmental regulation. Even if some of these activities are now considered to be "standard practice", include related expenditures if they are required by regulation or convention. Use Question 10 to report imputed interest on funds held in trust against future environmental liabilities. Report only actual expenditures.

### **For petroleum operations**

Please report separately, if possible, environmental protection expenditures associated with different petroleum operations: exploration, refining and chemical products.

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## **Question 2) Waste management and sewerage services**

### **What is waste?**

Waste is a material that is unwanted by its producer. The unwanted materials may be by-products of a production process - fly ash from a furnace, for example. Alternatively they might be products, the inherent value of which has been consumed from the perspective of the current holder - for example, a newspaper that has been read, a package that has been opened and emptied of its contents or an apple eaten to the core are all similar insofar as they have lost their original inherent value from the consumer's perspective.

### **Hazardous waste**

Includes all materials that may be hazardous to human health or the environment, due to their nature or quantity, and which require special handling techniques as specified by the Transportation of Dangerous Goods Regulations (1985), The Canadian Environmental Protection Act (1988), The Basel Convention (1989), or the Export and Import of Hazardous Waste Regulations (1992).

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## **Question 3) Pollution abatement and control (end-of-pipe) processes**

**3.1** Pollution abatement and control (end-of-pipe processes) can be described as equipment and processes that treat pollution and wastes *after* they have been created. Examples of these types of equipment or processes include scrubbers at the end of emission stacks, biological and chemical systems for treating water (such as a water treatment plant), filtration systems, cyclones or other barrier systems. These end-of-pipe processes are not an integral part of production: their sole purpose is to abate or to control undesirable substances resulting from normal production.

**3.2/3 Substances released to air** - emissions of pollutants (including greenhouse gases) to the atmosphere.

**Substances released to surface waters** - releases of pollutants to water bodies.

**On-site releases to land/underground injection** - releases of pollutants to land and/or injected into the ground within the boundaries of your establishment.

**Noise, vibration or radiation** - control of noise, vibration or radiation.

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## **Question 4) Pollution prevention**

Pollution prevention is the use of technologies, equipment, or processes that reduce or eliminate pollution and/or waste at the source - i.e., before the pollution or waste is created - as opposed to an end-of-pipe process. Examples include the installation of more efficient processes that consume less energy or inputs, the redesign or reformulation of the production process to reduce pollution or emissions, reuse, recirculation or recycling of materials on-site (does not include materials sent off-site for recycling).

#### 4.1 Pollution prevention methods

Examples are listed for each category of pollution prevention. Note: lists are not exhaustive.

**Product design or reformulation** - changing product specifications to reduce or eliminate the use of toxic substances; modifying product design or composition to make them more environmentally friendly; modifying packaging.

**Equipment or process modifications (integrated process)** - instituting recycling within a process; switching from the use of solvents to mechanical paint-stripping devices; modified or installed rinse systems; improved rinse equipment design; improved rinse equipment operation; modifying equipment, layout or piping; use of a different process catalyst; institute better controls on operating bulk containers or changing from small volume containers to bulk containers to minimize discarding of empty containers.

**Recirculation, on-site recycling or reuse or recovery of materials or substances** - such as using a small distillation unit to reclaim solvents on-site; vapour recovery; recovery of sludge; water recirculation; reuse of water for refrigeration condenser operation. *Excludes materials transferred or recycled off-site*

**Materials or feedstock substitution, solvent reduction, elimination or substitution** - the use of aqueous-based rather than solvent-based cleaners; increased purity of raw materials; substituted raw materials; other raw material modifications.

**Improved inventory management or purchasing techniques** - avoiding the unnecessary generation of waste by ensuring that materials do not stay in inventory beyond shelf life; eliminating shelf-life requirements for stable materials; instituting better labelling procedures; instituting a clearinghouse to exchange materials that would otherwise be discarded.

**Prevention of leaks and spills** - taking measures to prevent releases such as installing splash guards and drip trays around equipment; modified containment procedures for cleaning units; improved draining procedures; improved storage or stacking procedures; improved procedures for loading, unloading and transfer operations; installed overflow alarms or automatic shut-off valves; installed vapour recovery systems; implemented inspection or monitoring program of potential spill or leak sources.

**Good operating practices or pollution prevention training** - changing production schedules to minimize equipment and feedstock changeovers; improved maintenance scheduling, record keeping or procedures; training staff to recognize and implement pollution prevention opportunities.

**Other, please specify** - please specify your pollution prevention activities if they are not listed in the preceding categories.

4.3/4 Pollution prevention - refer to instructions for 3.2/3 on page 14.

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#### Question 12) Renewable energy technologies

Examples are listed for each of the technologies and processes found in Question 12.

##### Description of the systems and equipment listed in Question 12:

- 1. Small, mini or micro-hydroelectric facility** - Micro-hydro = less than 100 kW; Mini-hydro = 100 kW to less than 1 000 kW (1MW); Small hydro = 1 MW to 25 MW (50 MW in British Columbia).
- 2. Solar energy systems or equipment** - active and passive solar systems; photovoltaics; solar thermal generators; solar water and space heating systems.
- 3. Wind energy systems or equipment** - horizontal and vertical axis turbines; towers and other types of equipment used to generate energy and electricity.
- 4. Biomass energy** - systems and equipment (turbines, boilers, process equipment) that use organic matter such as forest and agricultural residues to produce electricity, steam, or heat.
- 5. Geothermal** - hot water or steam extracted from the Earth's interior and used for geothermal heat pumps, water heating or electricity generation.
- 6. Other renewable energy systems or equipment** - please specify your renewable energy systems and equipment if they are not listed in the preceding categories (e.g., systems and equipment for energy production from wave, tidal, and ocean thermal energy conversion systems).

### Question 13) Environmental management practices

1. An **environmental management system** is a management structure that allows an establishment to assess and control the environmental impact of its activities.
2. **Life Cycle Management, Life Cycle Assessment** refer to tools that identify and measure direct and indirect environmental, energy and resource impacts associated with a product, process or service through its design, production, usage and final disposal. **Design for Environment** is the integration of environmental considerations into the design, production, distribution, use and end-of-life of products.
3. **The ISO 14000 family** (ISO14001...ISO14064 inclusive) of environmental management standards are an internationally recognized set of standards and guidelines primarily concerned with environmental management systems developed by the International Organization for Standardization.
4. A **pollution prevention plan** establishes a plan to meet or exceed compliance and improve the efficiency and environmental performance of an establishment, a specific operation or a particular product.
5. **Voluntary actions** include codes of environmental practice, guidelines, emission and waste reduction targets, as well as agreements with governments.
6. **Green procurement** describes the procurement of goods and services that minimize environmental impacts compared with goods and services with similar performance requirements. The costs and environmental impacts of a product at various stages of its life cycle are taken into consideration, such as the process used to manufacture the product (including raw materials), transport, store, handle, operate or dispose of the product.
7. **Eco-labelling programs** such as Enviro Choice (operated by TerraChoice Environmental Services Inc. for Environment Canada) are designed to encourage manufacturers and suppliers to develop environmentally preferable products and services. These eco-labelling programs are meant to help consumers identify products and services that are less harmful to the environment.
8. **Environmental supply chain management** refers to the inclusion of environmental standards in the planning and management of activities involved in sourcing and procurement, conversion, and all logistics management activities. It also includes the coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. Environmental supply chain management integrates supply and demand environmental management within and across companies.
9. **Use of energy management or monitoring system(s) to improve efficiency** - an energy conservation feature that uses computers, instrumentation, control equipment and software to manage a building's energy use for heating, ventilation, air-conditioning, lighting and for business-related processes.
10. **Performed energy audit in the last three years (2010-2012)** - an analysis of the energy consuming systems within an establishment and the identification of potential areas for reducing energy consumption.
12. **Greenhouse gas emissions inventory** - an estimate of the amount of greenhouse gas produced by the establishment over a given unit of time, measured in tonnes.
13. **Carbon-trading and/or sale of carbon-offset credits** - a market-based system in which an establishment that produces less than their allowable carbon emissions can trade or sell the unused portion of their allowance to another establishment.