

2022 Annual Environmental Protection Expenditure Survey

CONFIDENTIAL once completed.

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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.

Introduction

Survey purpose

The purpose of this survey is to obtain information on the expenditures made by industry to protect the environment in Canada. This information serves as an important indicator of Canadian investment in environmental protection.

Data from this survey are used by all levels of government in establishing informed environmental policies. The private sector also uses this information in the corporate decision-making process.

Your information may also be used by Statistics Canada for other statistical and research purposes.

Security of emails and faxes

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

Note: Our online questionnaires are secure, there is no risk of data interception when responding to Statistics Canada online surveys.

Confidentiality

The *Statistics Act* protects the confidentiality of information collected by Statistics Canada.

Data-sharing agreements

To reduce respondent burden, Statistics Canada has entered into data-sharing agreements with provincial and territorial statistical agencies and other government organizations, which have agreed to keep the data confidential and use them only for statistical purposes.

Information on confidentiality, data-sharing agreements and record linkages can be found on the last page of this questionnaire.

Please return the questionnaire within 21 days.

Please mail the completed questionnaire in the enclosed envelope or fax it to Statistics Canada at 1-888-883-7999.

If you are unable to complete within 21 days OR if you need help, call us at 1-877-949-9492 or TTY 1-800-363-7629.

Statistics Canada
Operations and Integration Division
150 Tunney's Pasture Driveway
Ottawa, Ontario K1A 0T6

visit our website, www.statcan.gc.ca

Reporting instructions

- Please print in ink.
- This survey requires **all environmental protection expenditures to be reported, whether or not they are in response to current or anticipated Canadian or international regulations, conventions or voluntary agreements.**
- Please report **expenditures made by the establishment listed above.**
- **Report** all dollar amounts in **Canadian dollars (CAN\$)**, rounded to the nearest dollar.
- Percentages should be rounded to whole numbers.
- When precise figures are not available, provide your best estimates.
- Enter '0' if there is no value to report.

Business or organization and contact information

1. **Verify or provide** the business or organization's **legal and operating name** and contact where needed.
Note: Legal name modifications should only be done to correct a spelling error or typo.

Legal name

Operating name (if applicable)

2. **Verify or provide the contact information** of the designated business or organization **contact person** for this questionnaire and correct where needed.

Note: The designated contact person is the person who should receive this questionnaire. The designated contact person may not always be the one who actually completes the questionnaire.

First name

Last name

Title

Preferred language of communication

English French

Mailing address (number and street)

City

Province, territory or state

Postal code or ZIP code

Example: A9A 9A9 or 12345-1234

Country

Email address

Example: user@example.gov.ca

Telephone number (including area code)

Example: 123-123-1234

Extension number
(if applicable)

Fax number (including area code)

Example: 123-123-1234

3. **Verify or provide the current operational status** of the business or organization identified by the legal and operating name above.

B00323 1 Operational **➤ Go to question 4**

2 Not currently operational
e.g., temporarily or permanently closed, change of ownership

➤ Why is this business or organization not currently operational?

B00309 2 Seasonal operations **➤ Go to question 3a**

3 Ceased operations **➤ Go to question 3b**

4 Sold operations **➤ Go to question 3c**

5 Amalgamated with other businesses or organizations **➤ Go to question 3d**

6 Temporarily inactive but will re-open **➤ Go to question 3e**

7 No longer operating due to other reasons **➤ Go to question 3f**

3a. Seasonal operations

When did this business or organization close for the season?

B00217
Date YYYY MM DD

When does this business or organization expect to resume operations?

B00218
Date YYYY MM DD **➤ Go to question 4**

3b. Ceased operations

When did this business or organization cease operations?

B00211
Date YYYY MM DD

Why did this business or organization cease operations?

B00311 1 Bankruptcy

2 Liquidation

3 Dissolution

4 Other
Specify the other reason why the operations ceased

➤ Go to question 4

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3c. Sold operations

When was this business or organization sold?

Date B00212

What is the legal name of the buyer?

➤ Go to question 4

B00406

3d. Amalgamated with other businesses or organizations

When did this business or organization amalgamate?

Date B00213

What is the legal name of the resulting or continuing business or organization?

B00407

What are the legal names of the other amalgamated businesses or organizations?

➤ Go to question 4

B00408

3e. Temporarily inactive but will re-open

When did this business or organization become temporarily inactive?

Date B00214

When does this business or organization expect to resume operations?

Date B00215

Why is this business or organization temporarily inactive?

➤ Go to question 4

B00313

3f. No longer operating due to other reasons

When did this business or organization cease operations?

Date B00216

Why did this business or organization cease operations?

B00314

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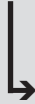
4. **Verify or provide the current main activity** of the business or organization identified by the legal and operating name.

Note: The described activity was assigned using the North American Industry Classification System (NAICS).

B05002

1 This is the current main activity > **Go to next section**

2 This **is not** the current main activity
Provide a **brief but precise description** of this business or organization's **main activity**
e.g., breakfast cereal manufacturing, shoe store, software development



B05003

5. Was this business or organization's main activity ever classified as:

B05111

1 Yes

2 No > **Go to next section**

6. When did the main activity change?

Date B00219

YYYY	MM	DD
<input type="text"/>	<input type="text"/>	<input type="text"/>

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Solid waste management

1. Report this establishment's capital expenditures and operating expenses for non-hazardous and hazardous **solid waste management** during the 2022 fiscal year.

Report \$0 for the two categories of expenditures if your establishment is located on a rental property, and that these expenditures are included in the rent paid to the owner of the building.

If your establishment is responsible to pay the municipal taxes report the amount towards solid waste management in operating expenses.

Include expenditures related to:

- non-hazardous and hazardous solid waste collection, transport, treatment, storage, disposal, recycling, and composting
- on-site preparation of materials for recycling at an off-site facility done by your establishment's employees and services provided by a private contractor or a federal, provincial or local government body
- assessments and audits
- activities related to measurement, control, laboratories
- municipal services (e.g., municipal taxes paid by your establishment)
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services

Exclude expenditures on:

- on-site recycling
- sewage or wastewater management (to be reported in question 5)
- treatment of high-level radioactive waste (to be reported in question 25).

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.

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 (e.g., obligations to clean up or pay for the cleanup of contamination).

If the expenditure is zero or if not applicable, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y9</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y9</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y9</small>

2. Of the **total expenditures** reported in question 1, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage spent

F61336_y9

3. Which of the following **goods and technologies related to solid waste management** were purchased by this establishment during the 2022 fiscal year?

Mark all that apply.

- 1 Collection vehicles for waste, recycling and organics
B05349_y9_p351
- 1 Containers for collection of waste, recycling and organics
B05349_y9_p352
- 1 Other recycling equipment used in collection
B05349_y9_p353
- 1 Separating and sorting-related goods and technologies
e.g., air classifiers, magnetic separators, eddy current separators
B05349_y9_p354
- 1 Compaction-related goods and technologies
e.g., balers, densifiers, compactors, shredders, granulators
B05349_y9_p355
- 1 Centralized biological reprocessing technologies
e.g., centralized composters
B05349_y9_p356
- 1 Equipment for landfill leachate collection and treatment
B05349_y9_p23
- 1 Equipment for landfill gas management
B05349_y9_p24
- 1 Equipment for thermal treatment
e.g., rotary kiln incinerator, mass burning, forced air incinerator, fluidized bed
B05349_y9_p25
- 1 Other
B05349_y9_p357

Specify other solid waste management goods or technologies purchased

B05349_y9_p358

OR

- 1 No purchases
B05349_y9_p359

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4. Which of the following **services related to solid waste management** (i.e., waste, recycling and organics) were used by this establishment during the 2022 fiscal year?

Mark all that apply.

Solid waste collection and treatment services included in the rent (paid by the owner of the building)
B05351_y9_p344

Solid waste collection and treatment services provided by a government body (paid in taxes, like municipal taxes)
If selected, go back to question 1 and enter the dollar figure from the municipal tax into the operating expenses field.
Include services offered by government bodies (e.g., municipal waste collection) or by a private company **hired by a government body** to collect and manage solid waste.
B05351_y9_p342

Solid waste collection and treatment services provided by a private contractor
If selected, go back to question 1 and enter the dollar figure from the invoice into the operating expenses field.
Include services provided by a private contractor **hired by your establishment** to collect and manage solid waste.
e.g., GFL (Green for life), Wasteco
B05351_y9_p343

Other
B05351_y9_p345
Specify other solid waste management services

B05351_y9_p346

OR

No services used
B05351_y9_p347

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Wastewater management

5. Report this establishment's capital expenditures and operating expenses for **wastewater management** during the 2022 fiscal year.

Report \$0 for the two categories of expenditures if your establishment is located on a rental property, and that these expenditures are included in the rent paid to the owner of the building.

If your establishment is responsible to pay the municipal taxes report the amount towards wastewater management in operating expenses.

Include expenditures related to:

- prevention of wastewater through in-process modifications
- wastewater treatment, **including** pollution abatement and control (end-of-pipe) processes
- management of substances released to surface waters, municipal sewer systems, soil or underground
- treatment of cooling water for disposal
- the installation of sewage infrastructure and expenditures related to the use, collection, treatment and disposal of sewage, **including** septic tanks
- sewage services provided by a federal, provincial or local government body (e.g., municipal taxes paid by your establishment)
- handling and treatment of mine tailings
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures on the protection of groundwater from pollutant infiltration and the cleaning up of soil and water bodies after pollution (to be reported in question 18).

If the expenditure is zero or if not applicable, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y10</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y10</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y10</small>

6. Of the **total expenditures** reported in question 5, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage spent

%

F61336_y10

i **Wastewater pollution abatement and control (end-of-pipe processes)** is any method, technique, or process designed to manage and treat pollution **after it is generated** during the production activities.

For example:

- biological and chemical systems to treat water (such as water treatment plants)
- filtration systems
- cyclones
- septic tanks, portable toilets
- other barrier systems
- treatment of cooling water before release
- municipal, provincial or federal sewage services.

Wastewater pollution prevention (integrated processes) is any method, technique, or process that **reduces or eliminates** the amount of pollution generated during the production process - **i.e., before pollution is created**. Pollution prevention activities can **include** equipment and technology modifications.

For example:

- product design or reformulation to be less toxic upon use, release or disposal
- equipment or process modifications (integrated processes)
- recirculation, on-site recycling or reuse or recovery of polluting substances
- materials or feedstock substitution, solvent reduction, elimination or substitution
- improved inventory management or purchasing techniques
- prevention of leaks and spills of polluting substances
- improved operating practices or pollution prevention training

7. Of the **capital expenditures** reported for **wastewater management** (question 4), what proportion was spent on each of the following?

If the proportion is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

Percentage

a. **Pollution abatement and control** (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F80132_y10_m1

b. **Pollution prevention** (integrated processes)
i.e., reduce or eliminate pollution before it is created

%
F80132_y10_m2

Total percentage
Should be equal to 100%

100 %
F80132_y10_m3

8. Of the **operating expenses** reported for **wastewater management** (question 5b), what proportion was spent on each of the following?

If the proportion is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

Percentage

a. **Pollution abatement and control** (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F61078_y10_m1

b. **Pollution prevention** (integrated processes)
i.e., reduce or eliminate pollution before it is created

%
F61078_y10_m2

Total percentage
Should be equal to 100%

100 %
F61078_y10_m3

9. Which of the following **goods and technologies related to wastewater management** were purchased by this establishment during the 2022 fiscal year?

Mark all that apply.

- 1 Tanks and related components for dilution or equalization, neutralization, sedimentation, chemical precipitation
B05349_y10_p53
 - 1 Oil separators, skimmers used in industrial wastewater
B05349_y10_p54
 - 1 Oil separators, skimmers in sewage treatment
B05349_y10_p64
 - 1 Ion exchange beds
B05349_y10_p55
 - 1 Air stripping tanks or columns
B05349_y10_p56
 - 1 Liquid extraction columns
B05349_y10_p57
 - 1 Micro-porous membrane adsorbers
B05349_y10_p58
 - 1 Equipment for advanced chemical oxidation or UV radiation
B05349_y10_p84
 - 1 Pre-treatment filters
B05349_y10_p60
 - 1 Chemicals used in industrial wastewater treatment
B05349_y10_p61
 - 1 Chemicals used in sewage treatment
B05349_y10_p69
 - 1 Intake screens
B05349_y10_p62
 - 1 Air sparging grit chambers
B05349_y10_p63
 - 1 Tanks and related components for sedimentation, chemical precipitation or flocculation, aerobic biological treatment, aeration, clarification, disinfection
B05349_y10_p65
 - 1 Membrane bioreactors
B05349_y10_p66
 - 1 Trickling filters
B05349_y10_p67
 - 1 Anaerobic digesters
B05349_y10_p68
 - 1 Other
B05349_y10_p360
- Specify other goods or technologies purchased for wastewater management
- B05349_y10_p361

OR

- 1 No purchases
B05349_y10_p362

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10. Which of the following **services related to wastewater management** were used by this establishment during the 2022 fiscal year?

Mark all that apply.

1 Wastewater management services included in the rent (paid by the owner of the building)
B05351_y10_p344

1 Wastewater management services provided by a government body (paid in taxes, like municipal taxes)
If selected, go back to question 5 and enter the dollar figure from the municipal tax into the operating expenses field.
Include services offered by government bodies (e.g., municipal sewage) or by a private company **hired by a government body** to manage and treat wastewater.
B05351_y10_p342

1 Wastewater management services provided by a private contractor
If selected, go back to question 5 and enter the dollar figure from the municipal tax into the operating expenses field.
Include services provided by a private contractor **hired by your establishment** to manage wastewater.
e.g., private company contracted to empty the septic tank
B05351_y10_p343

1 Other
B05351_y10_p348

Specify other wastewater management services

B05351_y10_p349

OR

1 No services used
B05351_y10_p350

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Environmental protection

11. During the 2022 fiscal year, did this establishment have environmental protection expenditures in any of the following categories?

Include capital expenditures and operating expenses.

Report both **own-account** expenses (e.g., employee wages and salaries) and purchased goods and services.

	Yes	No
<p>a. Air pollution management Expenditures related to air pollution prevention (i.e., integrated processes) and air pollution abatement and control (i.e., end-of-pipe processes), including monitoring and related environmental assessments and audits. e.g., scrubbers, air and off-gas treatments, low emitting burners, leak detection technologies Exclude heat or energy savings and management (to be reported in question 31a), the purchase of clean vehicle and transportation equipment (to be reported in question 31b), the production of renewable or clean energy (to be reported in questions 31c and 31e), the purchase of biofuels, biochemical products or biomaterials (to be reported in question 31d), and the purchase of carbon offset credits (to be reported in part f, below).</p> <p>B05203_y11</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>b. Protection and remediation of soil, groundwater and surface water Expenditures for the prevention of pollution infiltration, cleaning up soil and water bodies, protection of soil from erosion, salinization and physical degradation, related environmental assessments and audits, monitoring, site reclamation and decommissioning. Include decommissioning expenditures incurred in the 2022 fiscal year even if the site closed before this period. Exclude wastewater management (to be included in question 5).</p> <p>B05203_y12</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>c. Protection of biodiversity and habitat Expenditures related to protecting wildlife and habitat from the effects of economic activity and to restoring wildlife or habitat that has been adversely affected by such activity, including monitoring and related environmental assessments and audits. Logging activities: exclude foregone revenues resulting from regulations or conventions that reduce the allowable harvest.</p> <p>B05203_y13</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>d. Noise and vibration abatement Expenditures related to the control, reduction and abatement of industrial and transport noise and vibration related to the activities of the establishment, including related environmental assessments and audits. Exclude the abatement of noise and vibration for the purpose of workplace protection.</p> <p>B05203_y14</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>e. Protection against radiation Expenditures for the reduction or elimination of the negative consequences of high-level radiation, including the handling, transportation and treatment of high-level radioactive waste – that is, waste that requires shielding during normal handling and transportation because of its high radionuclide content. Exclude management of low-level radioactive waste (to be included in question 1).</p> <p>B05203_y15</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>f. Environmental charges Expenditures for permits, approvals, fees, site assessments and related fees, carbon offset credits, fines, penalties or damage awards paid to government agencies or to individuals and other charges paid to regulating bodies in order to allow operations to take place at this establishment.</p> <p>B05203_y8</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>g. Other environmental protection activities Expenditures related to the general administration of environmental programs, training, assessments and audits that could not be separated into any of the categories listed above, and other initiatives not already reported. Report imputed interest on bonds held in trust against future environmental liabilities. Exclude research and development (not covered in this survey); heat or energy savings and management (to be reported in question 31a); the purchase of clean vehicles and transportation goods (to be reported in question 31b), the production of renewable or clean energy (to be reported in questions 31c and 31e), and the purchase of biofuels, biochemicals or biomaterials (to be reported in question 31d).</p> <p>B05203_y90</p>	1 <input type="radio"/>	2 <input type="radio"/>

Air pollution management

12. Report this establishment's capital expenditures and operating expenses for **air pollution management** during the 2022 fiscal year.

Include expenditures related to:

- the management of pollutant emissions to the atmosphere, **including** greenhouse gases
- both pollution prevention (integrated processes) and pollution abatement and control (end-of-pipe processes)
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to:

- workers' health and safety (e.g., maintenance of indoor air quality)
- measures undertaken for cost-saving reasons, such as heat or energy savings (to be reported in question 31a)
- the purchase of electric or hybrid vehicles (to be reported in question 31b)
- the production of renewable or clean energy (to be reported in questions 31c and 31e)
- the purchase of biofuels (to be reported in question 31d)
- the purchase of renewable energy (not included in this survey).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 F80132_y11
b. Operating expenses	\$ <input type="text"/> .00 F61078_y11
Total expenditures	\$ <input type="text"/> .00 F60007_y11

13. Of the **total expenditures** reported in question 12, report the **proportion spent externally on purchased goods, technologies and services**.

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage
spent

%

F61336_y11

i **Air pollution abatement and control (end-of-pipe processes)** is any method, technique, or process designed to manage and treat pollution **after it is generated** during the production activities.

For example:

- scrubbers at the end of emission stacks
- filtration systems
- cyclones
- other barrier systems.

Air pollution prevention (integrated processes) is any method, technique or process that reduces or eliminates the amount of pollution generated during the production process - **i.e., before pollution is created**. Pollution prevention activities can include equipment and technology modifications.

For example:

- product design or reformulation to be less toxic upon use, release or disposal
- equipment or process modifications (integrated processes)
- recirculation, on-site recycling or reuse/recovery of air polluting substances
- materials or feedstock substitution, solvent reduction, elimination or substitution
- amélioration de la gestion des stocks ou des techniques de chat
- prevention of leaks of polluting substances
- improved operating practices or pollution prevention training.

14. Of the **capital expenditures** reported for **air pollution management** (question 12a), what proportion was spent on each of the following?

If the proportion is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

Percentage

a. **Pollution abatement and control** (end-of-pipe) i.e., manage or treat pollution after it has been created %

F80132_y11_m1

b. **Pollution prevention** (integrated processes) i.e., reduce or eliminate pollution before it is created %

F80132_y11_m2

Total percentage %
Should be equal to 100%

F80132_y11_m3

15. Of the **operating expenses** reported for **air pollution management** (question 12b), what proportion was spent on each of the following?

If the proportion is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

Percentage

a. **Pollution abatement and control** (end-of-pipe) i.e., manage or treat pollution after it has been created %

F61078_y11_m1

b. **Pollution prevention** (integrated processes) i.e., reduce or eliminate pollution before it is created %

F61078_y11_m2

Total percentage %
Should be equal to 100%

F61078_y11_m3

16. Which of the following **goods and technologies related to air pollution management** were purchased by this establishment during the 2022 fiscal year?
Mark all that apply.

► **Physical or chemical treatment technologies**

1 Filters and cyclones
e.g., membrane, baghouse, granular bed
B05349_y11_p29

1 Electrostatic precipitators
B05349_y11_p30

1 Scrubbers
e.g., venturi, spray tower, mechanical, plate tower, packed tower
B05349_y11_p31

1 Waste gas absorbers and waste gas flare or incinerators
B05349_y11_p32

1 Industrial catalytic converters
B05349_y11_p33

1 Pollutant recovery condensers
B05349_y11_p34

1 Adsorbers
B05349_y11_p35

1 Other
B05349_y11_p364

Specify other physical or chemical treatment technologies purchased

B05349_y11_p365

OR

1 No purchases
B05349_y11_p366

► **Greenhouse gas control technologies**

1 Clean coal processing technologies
B05349_y11_p39

1 Carbon capture and sequestration technologies and storage
B05349_y11_p40

1 Air and off-gas treatments
e.g., oxidation, scrubbing, vapour phase carbon adsorption
B05349_y11_p102

1 Other
B05349_y11_p41

Specify other greenhouse gas control technologies purchased

B05349_y11_p42

OR

1 No purchases
B05349_y11_p367

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► **Air quality and air pollution technologies**

1 Low emitting burners
e.g., low NOx, low SOx
B05349_y11_p43

1 Other
B05349_y11_p44

Specify other air quality and air pollution technologies purchased

B05349_y11_p45

OR

1 No purchases
B05349_y11_p368

► **Monitoring and compliance technologies**

1 Leak detection technologies
B05349_y11_p46

1 Environmental measurement apparatus
B05349_y11_p47

1 Other
B05349_y11_p48

Specify other monitoring and compliance technologies purchased

B05349_y11_p49

OR

1 No purchases
B05349_y11_p370

17. Which of the following **services related to air pollution management** were purchased by this establishment during the 2022 fiscal year?

Mark all that apply.

► **Greenhouse gas management services**

1 Services for carbon credit trading, generation of compliance units, surplus allowances, emissions performance credits, and offset credits
B05351_y11_p282

1 Preparation of emissions reports and verification services
B05351_y11_p283

1 Allowance auctioning and exchange platform services
B05351_y11_p284

1 Market monitoring services
B05351_y11_p285

1 Offset protocol development and validation services
B05351_y11_p286

1 Services for the development of compliance systems and electronic emissions reporting systems
B05351_y11_p287

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1 Other
B05351_y11_p371

Specify other greenhouse gas management services purchased

B05351_y11_p372

OR

1 No purchases
B05351_y11_p373

➤ Air pollution management services

1 Measuring and monitoring services
B05351_y11_p288

1 Modelling and mapping services
B05351_y11_p289

1 Risk assessment and management services
B05351_y11_p290

1 Services for the development of compliance and electronic emissions reporting systems
B05351_y11_p291

1 Other
B05351_y11_p44

Specify other air pollution management services purchased

B05351_y11_p45

OR

1 No purchases
B05351_y11_p368

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Protection and remediation of soil, groundwater and surface water

18. Report this establishment's capital expenditures and operating expenses for the **protection and remediation of soil, groundwater and surface water** during the 2022 fiscal year.

Include expenditures related to:

- prevention of pollutant infiltration
- remediation or cleaning up of soil and water bodies
- site reclamation and decommissioning (**include** decommissioning costs incurred in the 2022 fiscal year, even if the site was closed before this period)
- protection of soil from erosion and other physical degradation
- prevention and remediation of soil salinity
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to:

- wastewater management activities (to be reported in question 5)
- protection of biodiversity and habitat (to be reported in question 21).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y12</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y12</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y12</small>

19. Of the **total expenditures** reported in question 18, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage spent

%
F61336_y12

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20. Which of the following **goods and technologies related to protection and remediation of soil, ground water and surface water** were purchased by this establishment during the 2022 fiscal year?

Include machinery, equipment, products, and technologies.

Mark all that apply.

In situ biological treatments
e.g., enhanced bioremediation, phytoremediation, bioventing
B05349_y12_p377

Ex situ biological treatments
e.g., bioreaction, biopiles, landfarming, slurry phase biological treatment
B05349_y12_p378

In situ physical and chemical treatments
Include the purchase of chemicals for remediation of soil, sediment, sludge, ground water, surface water or leachate.
e.g., biochar, chemical oxidation, fracturing, soil flushing, soil vapour extraction, solidification, stabilization, air sparging, bioslurping, chemical oxidation, directional wells, dual phase extraction, thermal treatment, hydrofracturing, enhancements, in-well air stripping, passive and reactive treatment walls
B05349_y12_p379

Ex situ physical and chemical treatments
Include the purchase of chemicals for remediation of soil, sediment, sludge, ground water, surface water and leachate.
e.g., chemical extraction, chemical reduction and oxidation, dehalogenation, separation, soil washing, solidification, stabilization, adsorption and absorption, advanced oxidation, air stripping, ion exchange, precipitation, flocculation, coagulation, separation, sprinkler irrigation
B05349_y12_p380

In situ thermal treatments
e.g., hot air injection, electrical resistance
B05349_y12_p111

Ex situ thermal treatments
e.g., incineration, pyrolysis, thermal desorption
B05349_y12_p112

Containment
B05349_y12_p381

Other
B05349_y12_p382

Specify other goods or technologies purchased for the protection and remediation of soil, groundwater and surface water

B05349_y12_p383

OR

No purchases
B05349_y12_p384

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Protection of biodiversity and habitat

21. Report this establishment's capital expenditures and operating expenses for the **protection of biodiversity and habitat** during the 2022 fiscal year.

Include expenditures related to:

- the protection, restoration and rehabilitation of wildlife and habitat
- purchase of land for protection of species and habitat
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to:

- site reclamation and decommissioning (to be reported in question 18)
- landscaping for decorative purposes, the rehabilitation of predominantly built-up landscapes, or other activities undertaken for predominantly aesthetic reasons
- weed control, maintenance of game or timber stocks, or other activities undertaken for predominantly economic reasons
- protection and rehabilitation of historic monuments or predominantly built-up or urban landscapes (unless the purpose is the protection of biodiversity and habitat)
- foregone revenues resulting from regulations or conventions that reduce the allowable harvest (e.g., for logging activities).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y13</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y13</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y13</small>

22. Of the **total expenditures** reported in question 21, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage spent

%

F61336_y13

Noise and vibration abatement

23. Report this establishment's capital expenditures and operating expenses for **noise and vibration abatement** during the 2022 fiscal year.

Include expenditures related to:

- the control, reduction and abatement of noise and vibration, **including** preventive in-process modifications at the source, the construction of anti-noise or anti-vibration facilities, or any other related activities
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to workers' health and safety.

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 F80132_y14
b. Operating expenses	\$ <input type="text"/> .00 F61078_y14
Total expenditures	\$ <input type="text"/> .00 F60007_y14

24. Of the **total expenditures** reported in question 23, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage
spent

%
F61336_y14

Protection against radiation

25. Report this establishment's capital expenditures and operating expenses for the **protection against radiation** during the 2022 fiscal year.

Include expenditures related to:

- protection of ambient media
- the transport and treatment of high-level radioactive waste
- assessments and audits
- activities related to measurement, control, laboratories
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to:

- the prevention of technological hazards (e.g., external safety of nuclear power plants)
- workers' health and safety
- management of low-level radioactive waste (reported in question 1).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 F80132_y15
b. Operating expenses	\$ <input type="text"/> .00 F61078_y15
Total expenditures	\$ <input type="text"/> .00 F60007_y15

26. Of the **total expenditures** reported in question 25, report the **proportion spent externally on purchased goods, technologies and services**.

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage
spent

%

F61336_y15

Environmental charges

27. Report the amount this establishment paid in **environmental charges** during the 2022 fiscal year.

Exclude expenditures related to:

- environmental charges already reported in another question
- carbon taxes.

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

CAN\$

a. Permits, approvals, fees, special assessments and related fees

\$.00

F61078_y8_sr1

b. Carbon offset credits

Exclude carbon taxes.

\$.00

F61078_y8_sr2

c. 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

\$.00

F61078_y8_sr3

d. Other environmental charges

Specify all other environmental charges:

\$.00

F61078_y8_sr5

F61078_y8_sr4

Total environmental charges

\$.00

F61078_y8_sr6

Other environmental protection activities

28. Report this establishment's capital expenditures and operating expenses for environmental protection during the 2022 fiscal year that were not already reported.

Include expenditures related to:

- the general administration of your environmental program
- environmental training and information programs not already reported
- assessments or audits not already reported
- any other environmental protection expenditures not already reported
- both own-account expenses (e.g., employee wages and salaries) and purchased goods and services.

Exclude expenditures related to:

- research and development (not covered in this survey)
- heat or energy savings and management (to be reported in question 31a)
- change to clean vehicles and transportation equipment (to be reported in question 31b)
- the production of renewable or clean energy (to be reported in questions 31c and 31e)
- the purchase of biofuels, biochemicals or biomaterials (to be reported in question 31d).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y90</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y90</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y90</small>

29. Of the **total expenditures** reported in question 28, report the **proportion spent externally on purchased goods, technologies and services**.

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage
spent

%
F61336_y90

Reporting changes and events that affected the business

- 30. Describe any changes or events that may have affected the reported environmental protection values for this establishment compared to the last reporting period.
e.g., We installed low-NOx burners in 2022 for air pollution management

Comment box

B00376

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Environmental technologies and processes

31. During the 2022 fiscal year, did this establishment have expenditures in any of the following categories?

Include both operating and capital expenditures.

	Yes	No
<p>a. Heat or energy savings and management Expenditures related to minimizing the intake of energy through in-process modifications as well as the minimization of heat and energy losses. This includes in-process modifications, insulation activities, energy recovery, monitoring, assessments and audits related to energy saving, and lighting upgrades.</p> <p>B05203_y16</p>	<input type="radio"/>	<input type="radio"/>
<p>b. Clean vehicles and transportation equipment Expenditures related to the purchase of electric and hybrid vehicles, vehicles using alternative fuels, alternative fuel retrofits on existing vehicles, and low-rolling resistance tires.</p> <p>B05203_y17</p>	<input type="radio"/>	<input type="radio"/>
<p>c. Production of energy from renewable sources, whether for sale or own use Expenditures related to the installation, operation and maintenance of equipment as well as operating and maintenance costs for existing equipment used to produce electricity or heat from renewable sources. e.g., wind, geothermal, hydroelectricity, solar, bioenergy, and waste to energy Exclude the costs of any feedstock used to produce energy, such as biofuel, to be included in (d), below.</p> <p>B05203_y18</p>	<input type="radio"/>	<input type="radio"/>
<p>d. Purchase of biofuels, biochemical products or feedstocks</p> <p>B05203_y19</p>	<input type="radio"/>	<input type="radio"/>
<p>e. Production of nuclear energy Expenditures related to the production of nuclear power. Exclude the costs of any feedstock used to produce energy such as uranium.</p> <p>B05203_y20</p>	<input type="radio"/>	<input type="radio"/>

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Heat or energy savings and management

32. Report this establishment's capital expenditures and operating expenses related to the **management of energy resources through heat or energy savings and management** during the 2022 fiscal year.

Include expenditures related to:

- energy savings through in-process modifications
- purchase of efficient industrial or commercial equipment, demand management technologies, or energy storage technologies
- purchase of energy efficiency services or smart grid services
- building and fleet energy audits
- thermal insulation activities
- energy recovery activities
- assessments and audits
- activities related to measurement, control, laboratories
- more efficient furnace
- lighting upgrades
- both own-account expenses (e.g., employee wages and salaries) and purchased goods, technologies and services.

Exclude expenditures related to:

- pollution abatement and control or prevention for air pollution (to be reported in question 12)
- the purchase of energy-efficient vehicles (to be reported in question 37)
- renewable/clean energy production (to be reported in questions 39 and 43)
- the purchase of biofuels (to be reported in question 41).

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ <input type="text"/> .00 <small>F80132_y16</small>
b. Operating expenses	\$ <input type="text"/> .00 <small>F61078_y16</small>
Total expenditures	\$ <input type="text"/> .00 <small>F60007_y16</small>

33. Of the **total expenditures** reported in question 32, report the **proportion spent externally on purchased goods, technologies and services.**

Purchased goods, technologies and services are goods, technologies and services provided by an outside company or service provider. They **exclude** in-house or own-account expenditures, such as employee wages and salaries.

When precise figures are not available, provide your best estimate.

Percentage
spent

%

F61336_y16

34. Which of the following **goods and technologies related to heat or energy savings and management** were purchased by this establishment during the 2022 fiscal year?

Include machinery, equipment, products, and technologies.

Mark all that apply.

➤ **Efficient industrial or commercial equipment**

1 High efficiency burners and boilers
e.g., Energy Star
B05349_y16_p197

1 High efficiency pumps and motors
e.g., Energy Star, NEMA Premium™
B05349_y16_p198

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- 1 High efficiency industrial or commercial HVAC
e.g., Energy Star
B05349_y16_p199
- 1 Combined heat and power generation (CHP/cogeneration)
B05349_y16_p200
- 1 High efficiency industrial or commercial lighting systems
e.g., Energy Star
B05349_y16_p209
- 1 Automation and control technologies
B05349_y16_p203
- 1 Energy efficient filters and processes
B05349_y16_p385
- 1 Advanced insulation
e.g., super insulating materials (SIMs), vacuum insulation panels (VIP), gas-filled panels (GIP) and aerogel-based products (ABP)
B05349_y16_p210
- 1 Predictive maintenance technologies
e.g., twinning, sensors, related software
B05349_y16_p386
- 1 Other
B05349_y16_p387
Specify other efficient industrial or commercial equipment purchased

B05349_y16_p388

OR

- 1 No purchases
B05349_y16_p389

► Demand management technologies

- 1 Smart inverters
B05349_y16_p118
- 1 Smart meters and devices
B05349_y16_p119
- 1 Phasor measurement units
B05349_y16_p120
- 1 Management systems
e.g., software
B05349_y16_p390
- 1 Other
B05349_y16_p122
Specify other demand management technologies purchased

B05349_y16_p123

OR

- 1 No purchases
B05349_y16_p391

► Energy storage technologies

- 1 Flywheels
B05349_y16_p124

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- 1 Equipment for pumped hydro systems
B05349_y16_p125
- 1 Equipment for compressed air systems
B05349_y16_p126
- 1 Advanced batteries
e.g., NiCd, NiMH, Li-ion, NaS, NaNiCl, hybrid flow, redox flow, hydrogen storage, synthetic natural gas
B05349_y16_p127
- 1 Fuel cells
B05349_y16_p128
- 1 Thermal storage systems
B05349_y16_p129
- 1 Double-layer capacitors (DLC)
B05349_y16_p130
- 1 Superconducting magnetic energy storage (SMES)
B05349_y16_p131
- 1 Other
B05349_y16_p132
Specify other energy storage technologies purchased:

OR

- 1 No purchases
B05349_y16_p392

35. Which of the following **services related to new energy savings and management** were purchased by this establishment during the 2022 fiscal year?
Mark all that apply

► **Energy efficiency services**

- 1 Green building certification services
B05351_y16_p264
- 1 Building or fleet energy audit and air leakage testing services
B05351_y16_p266
- 1 Energy management system services
B05351_y16_p393
- 1 Energy monitoring services
B05351_y16_p267
- 1 Energy demand control services
B05351_y16_p268
- 1 Data analysis and modelling services
B05351_y16_p269
- 1 Process integration services
B05351_y16_p270
- 1 Services for advanced insulation activities
B05351_y16_p271

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1 Energy efficiency consulting
B05351_y16_p272

1 Predictive maintenance services
B05351_y16_p386

1 Other
B05351_y16_p214

Specify other energy efficiency services purchased

B05351_y16_p213

OR

1 No purchases
B05351_y16_p394

➤ Smart grid services

1 Energy storage solutions
B05351_y16_p317

1 Microgrid solutions
B05351_y16_p318

1 Cyber security services
B05351_y16_p319

1 Data management and communication solutions
B05351_y16_p320

1 Demand management services
e.g., peak load management and load following
B05351_y16_p321

1 Monitoring solutions services
e.g., self-healing grids
B05351_y16_p322

1 Other
B05351_y16_p323

Specify other smart grid services purchased

B05351_y16_p324

OR

1 No purchases
B05351_y16_p395

36. Report this establishment's expenditures for **goods, technologies and services related to the management** of energy resources through **heat, energy savings, and management during** the 2022 fiscal year in each of the following categories.

CAN\$

a. **Efficient industrial or commercial equipment**
e.g., high efficiency burners and boilers (Energy Star), high efficiency pumps (Energy Star) and motors (NEMA Premium™), high efficiency light systems (Energy Star) \$.00
F61336_y16_p396

b. **Demand management technologies**
e.g., smart inverters, smart meters and devices, phasor measurement units, management systems (software) \$.00
F61336_y16_p321

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c. Energy storage technologies e.g., flywheels, equipment for pumped hydro systems and compressed air systems, advanced batteries, fuel cells, thermal storage systems	\$ [redacted] .00 F61336_y16_p398
d. Energy efficiency services e.g., green building certification services, building or fleet energy audit and air leakage testing services, energy management system services	\$ [redacted] .00 F61336_y16_p398
e. Smart grid services e.g., energy storage solutions, microgrid solutions, cyber security systems, demand management services (i.e., peak load management and load following)	\$ [redacted] .00 F61336_y16_p399
Total	\$ [redacted] .00 F61336_y16_p401

Clean vehicles and transportation equipment

37. Report the amount this establishment spent on the purchase of **clean vehicles and transportation equipment** during the 2022 fiscal year.

Include:

- electric, hybrid, and fuel cell vehicles (all-types)
- fuel efficient aircraft
- electric vehicle infrastructure
- alternative fuel and refuelling infrastructure
- low rolling resistance tires
- vehicle emissions monitoring technologies
- alternative fuel retrofit technologies
- equipment or software for vehicle fleet management and logistics.

Exclude:

- operating and maintenance costs for running clean vehicles
- expenses for fleet energy audits (to be reported in question 32)
- any equipment or vehicles for sale.

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

Total expenditures

\$ [redacted] .00
F61336_y17

38. Which of the following **clean vehicles and transportation equipment** were purchased by this establishment during the 2022 fiscal year?

Mark all that apply.

▶ **Clean vehicles**

- 1 Electric vehicles
Include all vehicle-types.
B05349_y17_p402
- 1 Hybrid vehicles
Include all vehicle-types.
B05349_y17_p402
- 1 Fuel cell vehicles
Include all vehicle-types.
B05349_y17_p128

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1 Fuel efficient aircraft
B05349_y17_p404

1 Other
B05349_y17_p405

Specify other clean vehicles purchased

B05349_y17_p406

OR

1 No purchases
B05349_y17_p407

➤ Clean transportation equipment

1 Electric vehicle infrastructure
Include charging stations.
B05349_y17_p222

1 Alternative fuel and refuelling infrastructure
Include hydrogen and natural gas.
B05349_y17_p223

1 Low rolling resistance tires
B05349_y17_p230

1 Vehicle emission monitoring
B05349_y17_p231

1 Alternative fuel retrofit technologies
B05349_y17_p316

1 Equipment or software for vehicle fleet management and logistics
B05349_y17_p313

1 Other
B05349_y17_p408

Specify other clean transportation equipment purchased

B05349_y17_p409

OR

1 No purchases
B05349_y17_p410

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Production of energy from renewable sources

39. Report this establishment's capital expenditures and operating expenses related to the production of energy from renewable sources during the 2022 fiscal year, including both electricity and heat.

Report also the proportion of energy produced from renewable sources for own use.

Include expenditures related to:

- the production of energy from renewable sources, whether for sale or own use
- the installation, operation, and maintenance of equipment, including infrastructure to support the production of renewable energy (e.g., costs for approvals and planning, transmission and distribution lines and other infrastructure)
- the operating and maintenance expenses of existing equipment.

Exclude expenditures related to:

- the purchase of the feedstock used to produce energy, such as biofuels (to be reported in question 42)
- the production of nuclear energy (to be reported in question 43)
- electricity purchased from the grid.

When precise figures are not available, provide your best estimate.

	Capital expenditures CAN\$	Operating expenses CAN\$	Percentage of energy production for OWN use
a. Wind energy	\$.00	\$.00	%
	F80131_e3	F67015_e3	E64063_e3
b. Geothermal energy	\$.00	\$.00	%
	F80131_e5	F67015_e5	E64063_e5
c. Energy produced from small hydroelectric facilities	\$.00	\$.00	%
	F80131_e1	F67015_e1	E64063_e1
d. Energy produced from large hydroelectric facilities	\$.00	\$.00	%
	F80131_e6	F67015_e6	E64063_e6
e. Solar energy	\$.00	\$.00	%
	F80131_e2	F67015_e2	E64063_e2
f. Bioenergy Excluding feedstock (to be reported in question 29).	\$.00	\$.00	%
	F80131_e4	F67015_e4	E64063_e4
g. Energy from waste	\$.00	\$.00	%
	F80131_e7	F67015_e7	E64063_e7
h. Other energy production from renewable resources 1 Specify other energy production from renewable resources 1	\$.00	\$.00	%
	F80131_e92	F67015_e93	E64063_e93
i. Other energy production from renewable resources 2 Specify other energy production from renewable resources 2	\$.00	\$.00	%
	F80131_e94	F67015_e95	E64063_e95
j. Other energy production from renewable resources 3 Specify other energy production from renewable resources 3	\$.00	\$.00	%
	F80131_e96	F67015_e97	E64063_e97
Total expenditures for the production of renewable energy	\$.00	\$.00	
	F80131_e100	F67015_e100	

40. Which of the following **goods or technologies used for the production of renewable energy** were purchased by this establishment during the 2022 fiscal year?

Mark all that apply.

➤ **Wind energy**

1 Wind turbine equipment, nacelle, blades, towers
B05352_e3_p1

1 Switchgear, transformers
B05352_e3_p2

1 Other
B05352_e3_p411

Specify all other goods or technologies purchased for the production of wind energy

B05352_e3_p412

OR

1 No purchases
B05352_e3_p413

➤ **Geothermal energy**

1 Heat pumps
B05352_e5_p414

1 Other
B05352_e5_p415

Specify all other goods or technologies purchased for the production of geothermal energy

B05352_e5_p416

OR

1 No purchases
B05352_e5_p417

Energy produced from small hydroelectric facilities

1 Turbines and related components
Exclude wave and tidal energy
B05352_e1_p4

1 Turbines and related components for wave or tidal energy
B05352_e1_p5

1 Generators, valves, gates, transformers, switchgear
Include component
B05352_e1_p6

1 Other
B05352_e1_p418

Specify all other goods or technologies purchased for the production of energy from small hydroelectric facilities

B05352_e1_p419

OR

1 No purchases
B05352_e1_p420

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► **Energy produced from large hydroelectric facilities**

1 Turbines and related components
Exclude wave and tidal energy.
B05352_e6_p4

1 Turbines and related components for wave or tidal energy
B05352_e6_p5

1 Generators, valves, gates, transformers, switchgear
Include components.
B05352_e6_p6

1 Other
B05352_e6_p421

Specify all other goods or technologies purchased for the production of energy from large hydroelectric facilities

B05352_e6_p422

OR

1 No purchases
B05352_e6_p423

► **Solar energy**

1 Active solar heating equipment
e.g., glazed flat plate collectors, glazed evacuated tubes and collectors, glazed panels and collectors for heating pools, perforated cladding for solar air heating
B05352_e2_p7

1 Active solar-power generation equipment
e.g., concentrating mirrors, receivers
B05352_e2_p8

1 Photovoltaic energy equipment
e.g., photovoltaic cells, modules, panels and arrays, inverters for solar photovoltaic systems
B05352_e2_p9

1 Other
B05352_e2_p424

Specify all other goods or technologies purchased for the production of solar energy

B05352_e2_p425

OR

1 No purchases
B05352_e2_p426

► **Production of bioenergy**

1 Mixers and blenders
B05352_e4_p131

1 Filtration systems
B05352_e4_p138

1 Biofuel reactors
e.g., distillation towers, pyrolyzers, catalyst beds, gasifiers, heat digesters
B05352_e4_p139

1 Washers
B05352_e4_p140

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1 **Dryers**
B05352_e4_p141

1 **Heaters**
B05352_e4_p142

1 **Storage systems related to bioenergy production**
B05352_e4_p143

1 **Shredders and chippers**
B05352_e4_p144

1 **Combined heat and power bioenergy systems**
B05352_e4_p145

1 **Domestic woodstoves**
B05352_e4_p146

1 **Biomass-fired industrial boilers**
B05352_e4_p147

1 **Anaerobic digesters**
B05352_e4_p148

1 **Other**
Exclude purchased biofuels.
B05352_e4_p149

Specify all other goods or technologies purchased for the production of bioenergy
Exclude purchased biofuels.

B05352_e4_p150

OR

1 **No purchases**
B05352_e4_p430

➤ **Energy from waste**

1 **Liquid organic waste to energy equipment**
B05352_e7_p12

1 **Solid organic waste to energy equipment**
B05352_e7_p13

1 **Other**
B05352_e7_p427

Specify all other goods or technologies purchased for the production of energy from waste

B05352_e7_p428

OR

1 **No purchases**
B05352_e7_p429

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Purchase of biofuels, biochemical products and biomaterials

41. Which of the following **biofuels, biochemical products and biomaterials** were purchased by this establishment during the 2022 fiscal year?
Mark all that apply.

► **Biofuels**

- 1 Pellets, chips, cubes, briquettes
B05349_y19_p152
- 1 Black pellets
B05349_y19_p431
- 1 Energy logs
B05349_y19_p153
- 1 Biocoal
B05349_y19_p154
- 1 Biochar
B05349_y19_p432
- 1 Ethanol, cellulosic ethanol
B05349_y19_p155
- 1 Biodiesel
B05349_y19_p156
- 1 Renewable diesel
B05349_y19_p157
- 1 Pyrolysis oil
B05349_y19_p433
- 1 Synthetic fuels
e.g., DME, Fisher Tropsch fuels, Biojet fuels
B05349_y19_p158
- 1 Bio-oil, pyrolytic oil, biomethanol
B05349_y19_p434
- 1 Biobutanol
B05349_y19_p160
- 1 Biogas
B05349_y19_p161
- 1 Renewable natural gas
e.g., biomethane
B05349_y19_p162
- 1 Syngas
B05349_y19_p163
- 1 Biohydrogen
B05349_y19_p164
- 1 Other
B05349_y19_p165
Specify other biofuels purchased:

OR

- 1 No purchases
B05349_y19_p435

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► **Biochemical products**

- 1 Aromatics, amino and organic acids, phenols, polyols
B05349_y19_p167
 - 1 Cellulose, hemicellulose, lignin
B05349_y19_p168
 - 1 Biochar
B05349_y19_p436
 - 1 Bio-oils, lubricants
B05349_y19_p170
 - 1 Solvents, adhesives, paints, coatings
B05349_y19_p171
 - 1 Biopolymers and resins
B05349_y19_p172
 - 1 Biopesticides
B05349_y19_p173
 - 1 Biostimulants
B05349_y19_p174
 - 1 Additives and catalysts
e.g., sodium hydroxide, potassium hydroxide, enzymes
B05349_y19_p175
 - 1 Other
B05349_y19_p177
- Specify other biochemical products purchased

B05349_y19_p176

OR

- 1 No purchases
B05349_y19_p437

► **Biomaterials**

- 1 Mats, cellulose products
B05349_y19_p178
 - 1 Bio-based auto parts, building materials, panels, cross-laminated timber
B05349_y19_p179
 - 1 Plastics, films, foams, hydrogels
B05349_y19_p180
 - 1 Nanomaterials and nanocomposites
B05349_y19_p181
 - 1 Nanocrystalline cellulose
B05349_y19_p182
 - 1 Other
B05349_y19_p184
- Specify other biomaterials purchased

B05349_y19_p183

OR

- 1 No purchases
B05349_y19_p438

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42. During the 2022 fiscal year, how much did this establishment spend on purchases in each of the following categories?

	CAN\$
a. Biofuels e.g., pellets, chips, cubes, briquettes, black pellets, energy logs, biocoal, biochar, lignin, cellulosic ethanol, biodiesel, renewable diesel, pyrolysis oil, synthetic fuels, bio-oil, pyrolytic oil, biomethanol, biobutanol, biogas, renewable natural gas, syngas, biohydrogen	\$ [] .00 F61336_y19_p439
b. Biochemical products e.g., aromatics, amino and organic acids, phenols, polyols, cellulose, hemicellulose, lignin, biochar, bio-oils, lubricants, solvents, adhesives, paints, coatings, biopolymers and resins, bio-pesticides, biostimulants, additives and catalysts	\$ [] .00 F61336_y19_p440
c. Biomaterials e.g., mats, cellulose products, bio-based auto parts, building materials, panels, cross-laminated timber, plastics, films, foams, hydrogels, nanomaterials and nanocomposites, nanocrystalline cellulose	\$ [] .00 F61336_y19_p441
Total expenditures	\$ [] .00 F61336_y19_p401

Production of nuclear energy

43. Report this establishment's capital expenditures and operating expenses related to the **production of nuclear energy** during the 2022 fiscal year.

Exclude the costs of any feedstock used to produce energy such as uranium.

If the expenditure is zero, enter '0' in the corresponding box. When precise figures are not available, provide your best estimate.

	CAN\$
a. Capital expenditures	\$ [] .00 F80132_y20
b. Operating expenses	\$ [] .00 F61078_y20
Total expenditures	\$ [] .00 F60007_y20

44. Which of the following **goods and technologies** related to the **production of nuclear energy** were purchased during the 2022 fiscal year?

Mark all that apply.

- Nuclear reactors or nuclear island components
B05349_y20_p10
- Nuclear fuel handling, processing, and fabrication equipment
B05349_y20_p11
- Other
B05349_y20_p442

Specify all other goods or technologies purchased for the production of nuclear energy

[]
B05349_y20_p443

OR

- No purchases
B05349_y20_p444

Reporting changes and events that affected the business

45. Describe any changes or events that may have affected the reported environmental technologies and processes values for this establishment compared to the last reporting period.
e.g., We bought two electric vehicles in 2022.

Comment box

B00377

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Drivers and obstacles

46. Which of the following were **drivers** to the adoption of new or significantly improved clean technologies, systems or equipment for this establishment during the 2022 fiscal year?

Mark all that apply.

Sufficient return on investment
i.e., sufficient business case
B05353_r1

Regulations
B05353_r2

Government incentives
B05353_r3

Carbon pricing
B05353_r4

Voluntary agreement
B05353_r5

Public image
B05353_r6

Corporate policy
B05353_r7

Part of regular capital turnover
B05353_r8

Other
B05353_r9

Specify all other drivers to the adoption of new or significantly improved clean technologies, systems or equipment

B05353_r10

OR

There were **no drivers** during the 2022 fiscal year
B05353_r11

47. Which of the following were **obstacles** to the adoption of new or significantly improved clean technologies, systems or equipment for this establishment during the 2022 fiscal year?

Mark all that apply,

Lack of regulations
B05353_r12

Changing regulations
B05353_r13

Insufficient return on investment
i.e., no business case
B05353_r14

Difficulty in obtaining financing
e.g., internal, private or government
B05353_r15

Competitive capital investments
B05353_r29

Lack of information or knowledge related to systems or equipment (new or significantly improved)
B05353_r16

Lack of available systems or equipment (new or significantly improved)
B05353_r17

Lack of technical skills required to support this type of investment
B05353_r18

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- 1 Lack of technical support or services
e.g., from consultants or vendors
B05353_r19
- 1 Regulatory or policy barriers
B05353_r20
- 1 Organizational structure too inflexible
B05353_r21
- 1 Decisions made by parent, affiliate or subsidiary businesses
B05353_r22
- 1 Difficulty in integrating new technologies with existing infrastructure, systems, standards and processes
B05353_r23
- 1 Other
B05353_r24
Specify all other obstacles to the adoption of new or significantly improved clean technologies, systems or equipment
B05353_r25

OR

- 1 There were **no obstacles** during the 2022 fiscal year.
B05353_r26

Environmental management practices

48. Did this establishment use an **environmental management system** during the 2022 fiscal year?

- B05354_pd1
- 1 Yes
 - 2 No
 - 9 Don't know

49. Did this establishment develop and/or follow a **pollution prevention plan** during the 2022 fiscal year?

- B05354_pd2
- 1 Yes
 - 2 No
 - 9 Don't know

50. Did this establishment use **Life Cycle Management, Life Cycle Assessment, Design for Environment (DfE) or Ecodesign** principles for decision-making during the 2022 fiscal year?

- B05354_pd3
- 1 Yes
 - 2 No
 - 9 Don't know

51. Was this establishment certified under the **ISO 14000** family of environmental management standards during the 2022 fiscal year?

- B05354_pd4
- 1 Yes
 - 2 No
 - 9 Don't know

52. Did this establishment participate in any **environmental voluntary agreements** or **voluntary environmental programs** during the 2022 fiscal year?
e.g., Environmental Performance Agreements (EPAs), Canadian GHG Reductions Registry, Canadian Industry Program for Energy Conservation (CIPEC), Forestry Stewardship Council (FSC), etc.

B05354_pd5

1 Yes



Specify the **programs, accords or agreements**:

B05354_pd6

2 No

9 Don't know

53. Did this establishment have a **'green' procurement policy or guidelines** during the 2022 fiscal year?

B05354_pd7

1 Yes

2 No

9 Don't know

54. Did this establishment have an **environmental supply chain management policy** during the 2022 fiscal year?

B05354_pd8

1 Yes

2 No

9 Don't know

55. Did this establishment implement any **new or improved** environmental processes and practices in response to an **environmental supply chain management policy** in place at a supplier or client business during the 2022 fiscal year?

B05354_pd9

1 Yes

2 No

9 Don't know

56. Did this establishment take advantage of any Canadian federal, provincial/territorial, or local government **environmental incentive programs, grants, loans, or tax credits** during the 2022 fiscal year?

e.g., ecoENERGY Initiative, Industrial Research Assistance Program (IRAP), SD Tech Fund, or Accelerated Capital Cost Allowance or Scientific Research and Experimental Development (SR&ED) for energy efficiency and renewable energy sources

B05354_pd10

1 Yes



Specify the **incentive programs, grants, loans or tax credits**:

B05354_pd11

2 No

9 Don't know

57. Did this establishment perform a **greenhouse gas emissions inventory** during the 2022 fiscal year?

B05354_pd12

- 1 Yes
- 2 No
- 9 Don't know

58. Did this establishment participate in any form of **carbon-trading, either purchasing or selling carbon offset credits** in the 2022 fiscal year?

B05354_pd13

- 1 Yes, purchased carbon offset credits only OR purchased more than sold
- 3 Yes, sold carbon offset credits only OR sold more than purchased
- 2 No, did not participate in any of the above
- 9 Don't know

59. Did this establishment participate in **any other environmental management practices** during the 2022 fiscal year?

B05354_pd14

- 1 Yes



Specify the **other environmental management practices**:

B05354_pd15

- 2 No
- 9 Don't know

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General information

Confidentiality

Your answers are confidential.

By law, Statistics Canada is prohibited from releasing any information it collects that 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 only.

Data-sharing agreements

To reduce respondent burden, Statistics Canada has entered into data-sharing agreements with provincial and territorial statistical agencies and other government organizations, which have agreed to keep the data confidential and use them only for statistical purposes. Statistics Canada will only share data from this survey with those organizations that have demonstrated a requirement to use the data.

Section 11 of the *Statistics Act* provides for the sharing of information with provincial and territorial statistical agencies that meet certain conditions. These agencies must have the legislative authority to collect the same information, on a mandatory basis, and the legislation must provide substantially the same provisions for confidentiality and penalties for disclosure of confidential information as the *Statistics Act*. Because these agencies have the legal authority to compel businesses to provide the same information, consent is not requested and businesses may not object to the sharing of the data.

For this survey, there are **Section 11** agreements with the provincial and territorial statistical agencies of Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon. The shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

Section 12 of the *Statistics Act* provides for the sharing of information with federal, provincial or territorial government organizations. Under **Section 12**, you may request to share your information with any of these organizations by writing a letter of objection to the Chief Statistician and returning it with the completed questionnaire. Please specify the organizations with which you do not want to share your data.

For this survey, there are **Section 12** agreements with Natural Resources Canada; Innovation, Science and Economic Development Canada; and the statistical agencies of Prince Edward Island, the Northwest Territories and Nunavut.

For agreements with provincial and territorial government organizations, the shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

Record linkages

To enhance the data from this survey and to reduce the reporting burden, Statistics Canada may combine the acquired data with information from other surveys or from administrative sources.

Thank you for completing this questionnaire.

Please retain a copy for your records.

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