

2018 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

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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

- Veuillez écrire en caractères d'imprimerie, à l'encre.
- 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 dollar amounts **in thousands of Canadian dollars.**
- Report dollar amounts **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 correct 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?

YYYY MM DD
Date B00217

When does this business or organization expect to resume operations?

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

3b. Ceased operations

When did this business or organization cease operations?

YYYY MM DD
Date B00211

Why did this business or organization cease operations?

B00311

1 ☐ Bankruptcy

2 ☐ Liquidation

3 ☐ Dissolution

4 ☐ Other
Specify the other reasons why the operations ceased

➤ **Go to question 4**

B00312

3c. Sold operations

When was this business or organization sold?

Date B00212

YYYY				MM		DD	

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

YYYY				MM		DD	

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

YYYY				MM		DD	

When does this business or organization expect to resume operations?

Date B00215

YYYY				MM		DD	

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

YYYY				MM		DD	

Why did this business or organization cease operations?

B00314

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

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

B00219

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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 2018 fiscal year.

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
- 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 4)
- treatment of high-level radioactive waste (to be reported in question 23).

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.

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

2. Of the **total expenditures** reported in question 1, report the **proportion spent 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 2018 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 containment

B05349_y9_p23

1

☐

Equipment for landfill gas management

B05349_y9_p24

1

☐

Equipment for thermal treatment

e.g., rotary kiln incinerator, mass burning, starved air incinerator, fluidized bed

B05349_y9_p25

1

☐

Other solid waste management goods or technologies

B05349_y9_p357

Specify other solid waste management goods or technologies

B05349_y9_p358

OR

1

☐

None of the above

B05349_y9_p359

Wastewater management

4. Report this establishment's capital expenditures and operating expenses for **wastewater management** during the 2018 fiscal year.

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 services)
- 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 16).

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

5. Of the **total expenditures** reported in question 4, report the **proportion spent 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 process.

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.

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.

6. Of the **capital expenditures** reported for **wastewater management** (question 4a), 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** for wastewater released to surface waters, municipal sewer systems or soil, or injected underground (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F80132_y10_m1

b. **Pollution prevention** for wastewater released to surface waters, municipal sewer systems or soil, or injected underground (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

7. Of the **operating expenses** reported for **wastewater management** (question 4b), 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** for wastewater released to surface waters, municipal sewer systems or soil, or injected underground (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F61078_y10_m1

b. **Pollution prevention** for wastewater released to surface waters, municipal sewer systems or soil, or injected underground (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

8. Which of the following **goods and technologies related to wastewater management** were purchased by this establishment during the 2018 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 goods and technologies related to wastewater management
B05349_y10_p360

Specify other goods and technologies related to wastewater management

B05349_y10_p361

OR

- 1 ☐ None of the above
B05349_y10_p362

Environmental protection

9. During the 2018 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., the elimination of pollution at the source) 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 28a), the purchase of fuel efficient vehicles and equipment (to be reported in question 28b), the production of renewable or clean energy (to be reported in questions 28c and 28e), the purchase of biofuels, biochemicals or biomaterials (to be reported in question 28d), carbon taxes and the purchase of carbon offset credits (to be reported in part h, 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 of 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 2018 fiscal year even if the site closed before this period. Exclude wastewater management (to be included in question 4).</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. For 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 this 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, levies, special 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 funds 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 28a), the purchase of clean vehicles and transportation goods (to be reported in question 28b), the production of renewable or clean energy (to be reported in questions 28c and 28e), and the purchase of biofuels, biochemicals or biomaterials (to be reported in question 28d).</p> <p>B05203_y90</p>	1 <input type="radio"/>	2 <input type="radio"/>

Air pollution management

10. Report this establishment's capital expenditures and operating expenses for **air pollution management** during the 2018 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 28a)
- the purchase of electric or hybrid vehicles (to be reported in question 28b)
- the production of renewable or clean energy (to be reported in questions 28c and 28e)
- the purchase of biofuels (to be reported in question 28d)
- 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

\$.00
F80132_y11

b. Operating expenses

\$.00
F61078_y11

Total expenditures

\$.00
F60007_y11

11. Of the **total expenditures** reported in question 10, report the **proportion spent 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 process.

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 d'achat
- prevention of leaks of polluting substances
- improved operating practices or pollution prevention training.

12. Of the **capital expenditures** reported for **air pollution management** (question 10a), 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. **Air pollution abatement and control** (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F80132_y11_m1

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

%
F80132_y11_m2

Total percentage
Should be equal to 100%

100 %
F80132_y11_m3

13. Of the **operating expenses** reported for **air pollution management** (question 10b), 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. **Air pollution abatement and control** (end-of-pipe)
i.e., manage or treat pollution after it has been created

%
F61078_y11_m1

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

%
F61078_y11_m2

Total percentage
Should be equal to 100%

100 %
F61078_y11_m3

14. Which of the following **goods and technologies related to air pollution management** were purchased by this establishment during the 2018 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 physical or chemical treatment technologies
B05349_y11_p364
- Specify other physical or chemical treatment technologies

B05349_y11_p365

OR

- 1 ☐ None of the above
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 greenhouse gas control technologies
B05349_y11_p41
- Specify other greenhouse gas control technologies

B05349_y11_p42

OR

- 1 ☐ None of the above
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 air quality and air pollution technologies
B05349_y11_p44

Specify other air quality and air pollution technologies

B05349_y11_p45

OR

- 1 ☐ None of the above
B05349_y11_p368

➤ **Monitoring and compliance technologies**

- 1 ☐ Leak detection technologies
B05349_y11_p46

- 1 ☐ Environmental measurement apparatus
B05349_y11_p47

- 1 ☐ Other monitoring and compliance technologies
B05349_y11_p48

Specify other monitoring and compliance technologies

B05349_y11_p49

OR

- 1 ☐ None of the above
B05349_y11_p370

15. Which of the following **services related to air pollution management** were purchased by this establishment during the 2018 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

...continues on next page

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- 1 ☐ Other greenhouse gas management services

B05351_y11_p371

Specify other greenhouse gas management services

B05351_y11_p372

OR

- 1 ☐ None of the above

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 air pollution management services

B05351_y11_p44

Specify other air pollution management services

B05351_y11_p45

OR

- 1 ☐ None of the above

B05351_y11_p368

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Protection and remediation of soil, groundwater and surface water

16. Report this establishment's capital expenditures and operating expenses for the **protection and remediation of soil, groundwater and surface water** during the 2018 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 2018 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 4)
- protection of biodiversity and habitat (to be reported in question 19).

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_y12
b. Operating expenses	\$ <input type="text"/> .00 F61078_y12
Total expenditures	\$ <input type="text"/> .00 F60007_y12

17. Of the **total expenditures** reported in question 16, report the **proportion spent 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

18. Which of the following **goods and technologies related to protection and remediation of soil, groundwater and surface water** were purchased by this establishment during the 2018 fiscal year?

Include machinery, equipment, products, and technologies.

Mark all that apply.

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

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

1 ☐ 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

1 ☐ 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

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

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

1 ☐ Containment
B05349_y12_p381

1 ☐ Other goods or technologies related to the protection and the remediation of soil, groundwater, surface water and leachate technologies
B05349_y12_p382

Specify other goods or technologies related to the protection and remediation of soil, groundwater, surface water and leachate technologies

B05349_y12_p383

OR

1 ☐ None of the above
B05349_y12_p384

Protection of biodiversity and habitat

19. Report this establishment's capital expenditures and operating expenses for the **protection of biodiversity and habitat** during the 2018 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 16)
- landscaping for decorative purposes, the rehabilitation of predominantly build-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 F80132_y13
b. Operating expenses	\$ <input type="text"/> .00 F61078_y13
Total expenditures	\$ <input type="text"/> .00 F60007_y13

20. Of the **total expenditures** reported in question 19, report the **proportion spent 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

21. Report this establishment's capital expenditures and operating expenses for **noise and vibration abatement** during the 2018 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.

a. Capital expenditures

CAN\$
\$.00
F80132_y14

b. Operating expenses

\$.00
F61078_y14

Total expenditures

\$.00
F60007_y14

22. Of the **total expenditures** reported in question 21, report the **proportion spent 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

23. Report this establishment's capital expenditures and operating expenses for the **protection against radiation** during the 2018 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.

a. Capital expenditures

CAN\$
\$.00
F80132_y15

b. Operating expenses

\$.00
F61078_y15

Total expenditures

\$.00
F60007_y15

24. Of the **total expenditures** reported in question 23, report the **proportion spent 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

25. Report the amount this establishment paid in **environmental charges** during the 2018 fiscal year.

Exclude expenditures on environmental charges already reported in another question.

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, levies, 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. All other environmental charges

Specify all other environmental changes

\$.00

F61078_y8_sr5

F61078_y8_sr4

Total environmental charges

\$.00

F61078_y8_sr6

DO NOT USE TO REPORT INFORMATION

Other environmental protection activities

26. Report this establishment's capital expenditures and operating expenses for environmental protection during the 2018 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 28a)
- fuel efficient vehicles and transportation goods or technologies (to be reported in question 28b)
- the production of renewable or clean energy (to be reported in questions 28c and 28e)
- the purchase of biofuels, biochemicals or biomaterials (to be reported in question 28d).

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_y90

b. Operating expenses

\$.00
F61078_y90

Total expenditures

\$.00
F60007_y90

27. Of the **total expenditures** reported in question 26, report the **proportion spent 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

Environmental technologies and processes

28. During the 2018 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. B05203_y16</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>b. Fuel efficient vehicles and transportation goods or technologies 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. B05203_y17</p>	1 <input type="radio"/>	2 <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, hydro, solar, and waste to energy Exclude the costs of any feedstock used to produce energy, such as biofuel, to be included in (d), below. B05203_y18</p>	1 <input type="radio"/>	2 <input type="radio"/>
<p>d. Purchase of biofuels, biochemicals or biomaterials B05203_y19</p>	1 <input type="radio"/>	2 <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. B05203_y20</p>	1 <input type="radio"/>	2 <input type="radio"/>

Heat or energy savings and management

29. 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 2018 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 10)
- the purchase of energy-efficient vehicles (to be reported in question 34)
- renewable/clean energy production (to be reported in questions 36 and 40)
- the purchase of biofuels (to be reported in question 38).

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_y16
b. Operating expenses	\$ <input type="text"/> .00 F61078_y16
Total expenditures	\$ <input type="text"/> .00 F60007_y16

30. Of the **total expenditures** reported in question 29, report the **proportion spent 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

31. Which of the following **goods and technologies related to heat or energy savings and management** were purchased by this establishment during the 2018 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 PremiumTM
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 (GFP), and aerogel-based products (ABP)
B05349_y16_p210
- 1 ☐ Predictive maintenance technologies
e.g., twinning, sensors, related software
B05349_y16_p386
- 1 ☐ Other efficient industrial or commercial equipment
B05349_y16_p387
- Specify other efficient industrial or commercial equipment

B05349_y16_p388

OR

- 1 ☐ None of the above
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 demand management technologies
B05349_y16_p122
- Specify other demand management technologies

B05349_y16_p123

OR

- 1 ☐ None of the above
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 energy storage technologies
B05349_y16_p132
- Specify other energy storage technologies

B05349_y16_p133
- OR
- 1 ☐ None of the above
B05349_y16_p392

32. Which of the following **services related to heat or energy savings and management** were purchased by this establishment during the 2018 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 energy efficiency services
B05351_y16_p214

Specify other energy efficiency services

B05351_y16_p213

OR

1 ☐ None of the above
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 communications 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 ☐ Autres services de réseau intelligent
B05351_y16_p323

Specify other smart grid services

B05351_y16_p324

OR

1 ☐ None of the above
B05351_y16_p395

33. Report this establishment's expenditures for **goods, technologies and services related to the management** of energy resources through **heat or energy savings and management during** the 2018 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 PremiumTM), 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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CAN\$

- | | |
|---|---|
| c. Energy storage technologies
e.g., flywheels, equipment for pumped hydro systems and compressed air systems, advanced batteries, fuel cells, thermal storage systems | \$ <input type="text"/> ,00
<small>F61336_y16_p317</small> |
| d. Other heat or energy savings goods or technologies | \$ <input type="text"/> .00
<small>F61336_y16_p397</small> |
| e. Energy efficiency services
e.g., green building certification services, building or fleet energy audit and air leakage testing services, energy management system services | \$ <input type="text"/> .00
<small>F61336_y16_p398</small> |
| f. Smart grid services
e.g., energy storage solutions, microgrid solutions, cyber security systems, demand management services (i.e., peak load management and load following) | \$ <input type="text"/> .00
<small>F61336_y16_p399</small> |
| g. Other heat or energy savings services | \$ <input type="text"/> .00
<small>F61336_y16_p400</small> |
| Total | \$ <input type="text"/> .00
<small>F61336_y16_p401</small> |

Clean vehicles and transportation technologies

34. Report the amount this establishment spent on the purchase of **clean vehicles and transportation goods or technologies** during the 2018 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 29)
- 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

\$.00

F61336_y17

35. Which of the following **clean vehicles and fuel efficient transportation equipment** were purchased by this establishment during the 2018 fiscal year?

Mark all that apply.

➤ **Fuel efficient vehicles**

- 1 ☐ Electric vehicles
Include all vehicle-types.
B05349_y17_p402

- 1 ☐ Hybrid vehicles
Include all vehicle-types.
B05349_y17_p403

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- 1 ☐ Fuel cell vehicles
Include all vehicle-types.
B05349_y17_p128

- 1 ☐ Fuel efficient aircraft
B05349_y17_p404

- 1 ☐ Other fuel efficient vehicles
B05349_y17_p405

Specify other fuel efficient vehicles

B05349_y17_p406

OR

- 1 ☐ None of the above
B05349_y17_p407

➤ **Fuel efficient 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 fuel efficient transportation equipment
B05349_y17_p408

Specify other fuel efficient transportation equipment

B05349_y17_p409

OR

- 1 ☐ None of the above
B05349_y17_p410

Production of energy from renewable sources

36. Report this establishment's capital expenditures and operating expenses related to the **production of energy from renewable sources** during the 2018 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 38)
- the production of nuclear energy (to be reported in question 40)
- 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	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e3	F67015_e3	E64063_e3
b. Geothermal	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e5	F67015_e5	E64063_e5
c. Small, mini-hydroelectricity and micro-hydroelectricity	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e1	F67015_e1	E64063_e1
d. Large hydroelectricity	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e6	F67015_e6	E64063_e6
e. Solar	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e2	F67015_e2	E64063_e2
f. Bioenergy production Excluding feedstock (to be reported in question 29).	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e4	F67015_e4	E64063_e4
g. Waste to energy	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e7	F67015_e7	E64063_e7
h. Other energy production from renewable resources 1 Specify other energy production from renewable resources 1	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e92	F67015_e93	E64063_e93
i. Other energy production from renewable resources 2 Specify other energy production from renewable resources 2	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e94	F67015_e95	E64063_e95
j. Other energy production from renewable resources 3 Specify other energy production from renewable resources 3	\$ <input type="text"/> .00	\$ <input type="text"/> .00	<input type="text"/> %
	F80131_e96	F67015_e97	E64063_e97
Total expenditures for the production of renewable energy	\$ <input type="text"/> .00	\$ <input type="text"/> .00	
	F80131_e100	F67015_e100	

37. Which of the following **goods or technologies used for the production of renewable energy** were purchased by this establishment during the 2018 fiscal year?

Mark all that apply.

➤ Wind

- 1 ☐ Wind turbine equipment, nacelle, blades, towers
B05352_e3_p1

- 1 ☐ Switchgear, transformers
B05352_e3_p2

- 1 ☐ Other wind technologies
B05352_e3_p411

Specify other wind technologies

B05352_e3_p412

OR

- 1 ☐ None of the above
B05352_e3_p413

➤ Geothermal

- 1 ☐ Heat pumps
B05352_e5_p414

- 1 ☐ Other equipment used in geothermal energy systems
B05352_e5_p415

Specify other equipment used in geothermal energy systems

B05352_e5_p416

OR

- 1 ☐ None of the above
B05352_e5_p417

Small, mini-hydroelectric and micro-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 components.
B05352_e1_p6

- 1 ☐ Other technologies related to small, mini-hydro and micro-hydro facilities
B05352_e1_p418

Specify other technologies related to small, mini-hydro and micro-hydro facilities

B05352_e1_p419

OR

- 1 ☐ None of the above
B05352_e1_p420

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➤ **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 technologies related to large hydroelectric facilities
B05352_e6_p421

Specify other technologies related to large hydroelectric facilities

B05352_e6_p422

OR

- 1 ☐ None of the above
B05352_e6_p423

➤ **Solar energy**

- 1 ☐ Active solar heating equipment
e.g., glazed flat plate collectors, glazed evacuated tubes and collectors, unglazed 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 solar technologies
B05352_e2_p424

Specify other solar technologies

B05352_e2_p425

OR

- 1 ☐ None of the above
B05352_e2_p426

➤ **Waste to energy**

- 1 ☐ Liquid organic waste to energy equipment
B05352_e7_p12

- 1 ☐ Solid organic waste to energy equipment
B05352_e7_p13

- 1 ☐ Other waste to energy technologies
B05352_e7_p427

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Specify other waste to energy technologies

B05352_e7_p428

OR

- 1 ☐ None of the above

B05352_e7_p429

► Production of bioenergy

- 1 ☐ Mixers and centrifuges

B05352_e4_p137

- 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

- 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 bioenergy production technologies

Exclude purchased biofuels.

B05352_e4_p149

Specify other bioenergy production technologies

Exclude purchased biofuels.

B05352_e4_p150

OR

- 1 ☐ Aucun de ces items

B05352_e4_p430

38. Which of the following **biofuels, biochemicals and biomaterials** were purchased by this establishment during the 2018 fiscal year?

Sélectionnez toutes les réponses qui s'appliquent.

► **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 bioenergy and biofuels
B05349_y19_p166

Specify other bioenergy and biofuels

B05349_y19_p165

OR

- 1 ☐ None of the above
B05349_y19_p435

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➤ **Biochemicals**

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 biochemicals
B05349_y19_p177
Specify other biochemicals

B05349_y19_p176

OR

1 ☐ None of the above
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 biomaterials
B05349_y19_p184
Specify other biomaterials

B05349_y19_p183

OR

1 ☐ None of the above
B05349_y19_p438

39. During the 2018 fiscal year, how much did this establishment spend on purchases in each of the following categories of **biofuels, biochemicals and biomaterials**?

CAN\$

a. **Biofuels**

e.g., pellets, chips, cubes, briquettes, black pellets, energy logs, biocoal, biochar, ethanol, 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. **Biochemicals**

e.g., aromatics, amino and organic acids, phenols, polyols, cellulose, hemicellulose, lignin, biochar, bio-oils, lubricants, solvents, adhesives, paints, coatings, biopolymers and resins, biopesticides, 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 purchases related to biofuels, biochemicals and biomaterials

\$.00
F61336_y19_p401

Production of nuclear energy

40. Report this establishment's capital expenditures and operating expenses related to the **production of nuclear energy** during the 2018 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 for the production of nuclear energy

\$.00
F60007_y20

41. Which of the following **goods and technologies related to the production of nuclear energy** were purchased during the 2018 fiscal year?

Mark all that apply.

1 ☐ **Nuclear reactors or nuclear island components**

B05349_y20_p10

1 ☐ **Nuclear fuel handling, processing, and fabrication equipment**

B05349_y20_p11

1 ☐ **Other nuclear energy technologies**

B05349_y20_p442

Specify other nuclear technologies

B05349_y20_p443

OR

1 ☐ **None of the above**

B05349_y20_p444

Drivers and obstacles

42. Which of the following were **drivers** to the adoption of new or significantly improved clean technologies, systems or equipment for this establishment during the 2018 fiscal year?

Mark all that apply.

1 ☐ Sufficient return on investment
i.e., sufficient business case

B05353_r1

1 ☐ Regulations

B05353_r2

1 ☐ Government incentives

B05353_r3

1 ☐ Carbon pricing

B05353_r4

1 ☐ Voluntary agreement

B05353_r5

1 ☐ Public image

B05353_r6

1 ☐ Corporate policy

B05353_r7

1 ☐ Part of regular capital turnover

B05353_r8

1 ☐ Other drivers

B05353_r9

Specify other drivers

B05353_r10

OR

1 ☐ There were **no drivers** during the 2018 fiscal year

B05353_r11

43. Which of the following were **obstacles** to the adoption of new or significantly improved clean technologies, systems or equipment for this establishment during the 2018 fiscal year?

Mark all that apply,

1 ☐ Lack of regulations

B05353_r12

1 ☐ Changing regulations

B05353_r13

1 ☐ Insufficient return on investment
i.e., no business case

B05353_r14

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

B05353_r15

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

B05353_r16

1 ☐ Lack of available systems or equipment (new or significantly improved)

B05353_r17

1 ☐ 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 obstacles
B05353_r24
- Specify other obstacles

B05353_r25

OR

- 1 ☐ There were **no obstacles** during the 2018 fiscal year.
B05353_r26

Environmental management practices

44. Did this establishment use an **environmental management system** during the 2018 fiscal year?

B05354_pd1

- 1 ☐ Yes
2 ☐ No
9 ☐ Don't know

45. Did this establishment develop and/or follow a **pollution prevention plan** during the 2018 fiscal year?

B05354_pd2

- 1 ☐ Yes
2 ☐ No
9 ☐ Don't know

46. Did this establishment use **Life Cycle Management, Life Cycle Assessment, Design for Environment (DfE) or Ecodesign** principles for decision-making during the 2018 fiscal year?

B05354_pd3

- 1 ☐ Yes
2 ☐ No
9 ☐ Don't know

47. Was this establishment certified under the **ISO 14000** family of environmental management standards during the 2018 fiscal year?

B05354_pd4

- 1 ☐ Yes
2 ☐ No
9 ☐ Don't know

48. Did this establishment participate in any **environmental voluntary agreements** or **voluntary environmental programs** during the 2018 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

49. Did this establishment have a '**green**' **procurement policy or guidelines** during the 2018 fiscal year?

B05354_pd7

1 ☐ Yes

2 ☐ No

9 ☐ Don't know

50. Did this establishment have an **environmental supply chain management policy** during the 2018 fiscal year?

B05354_pd8

1 ☐ Yes

2 ☐ No

9 ☐ Don't know

51. 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 2018 fiscal year?

B05354_pd9

1 ☐ Yes

2 ☐ No

9 ☐ Don't know

52. Did this establishment take advantage of any Canadian federal, provincial/territorial, or local government **environmental incentive programs, grants, loans, or tax credits** during the 2018 fiscal year?

e.g., ecoENERGY Initiatives, 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

53. Did this establishment perform a **greenhouse gas emissions inventory** during the 2018 fiscal year?

B05354_pd12

- 1 ☐ Yes
2 ☐ No
9 ☐ Don't know

54. Did this establishment participate in any form of **carbon-trading, either by purchasing or selling carbon offset credits** in the 2018 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

55. Did this establishment participate in **any other environmental management** practices during the 2018 fiscal year?

B05354_pd14

- 1 ☐ Yes



Specify the **other environmental management** practices:

B05354_pd15

- 2 ☐ No
9 ☐ Don't know

Changes or events

56. Indicate any changes or events that affected the reported values for this business or organization compared with the last reporting period.

Mark all that apply.

☐

Strike or lock-out

B00302_11

☐

Exchange rate impact

B00302_12

☐

Price changes in goods or services sold

B00302_13

☐

Contracting out

B00302_14

☐

Organizational change

B00302_15

☐

Price changes in labour or raw materials

B00302_16

☐

Natural disaster

B00302_17

☐

Recession

B00302_18

☐

Change in product line

B00302_19

☐

Sold business or business units

B00302_110

☐

Expansion

B00302_111

☐

New or lost contract

B00302_112

☐

Plant closures

B00302_113

☐

Acquisition of business or business units

B00302_114

☐

Other changes or events — specify:

B00302_115

☐

B00302_116

OR

☐

No changes or events

B00302_117

Contact person

57. Statistics Canada may need to contact the person who completed this questionnaire for further information.

If the contact person is the same as on cover page, please check ☐ **Go to "Feedback"**

Otherwise, who is the **best person to contact** about this questionnaire?

First name

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Last name

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Title

0000

Email address (Example: user@example.gov.ca)

10/24

Telephone number (including area code)

Example: 123-123-1234

Extension number
(if applicable)

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Fax number (including area code)

Example: 123-123-1234

Feedback

58. How long did it take to complete this questionnaire?

Include the time spent gathering the necessary information.

Hours

Minutes

59. We invite your comments about this questionnaire.

B00002

DO NOT

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 refuse 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.

Visit our website, www.statcan.gc.ca