

# 2016 Annual Survey of Research and Development in Canadian Industry

**CONFIDENTIAL once completed.**

Selon nos dossiers votre langue de préférence est l'anglais, si vous préférez recevoir ce document en français, veuillez nous appeler au numéro sans frais suivant : 1-800-972-9692.

Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name	
Operating name	
First name	
Last name	
Title	
Address (number and street)	
City	
Province, territory or state	Postal code or ZIP code
Country	

## Business or organization and contact information

Email address	Telephone number (including area code)	Extension number
<input type="text"/>	<input type="text"/>	<input type="text"/>
Preferred language of communication	Fax number (including area code)	
<input type="radio"/> English <input type="radio"/> French	<input type="text"/>	

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

This survey collects information on scientific activities of Canadian businesses. The research and development expenditures and personnel information is used by federal, provincial and territorial governments and agencies, academics, trade associations and international organizations for statistical analyses and policy purposes. These data also contribute to national totals of research and development activities. The payments and receipts information is used by these agencies to monitor knowledge flows across international borders and between Canadian businesses.

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 **1-800-972-9692**.

Statistics Canada  
Operations and Integration Division  
150 Tunney's Pasture Driveway  
Ottawa, Ontario K1A 0T6  
Visit our website, [www.statcan.gc.ca](http://www.statcan.gc.ca)

## Reporting instructions

- Please print in ink.
- Report all dollar amounts in **thousands of Canadian dollars**.
- Do not include sales tax.
- Percentages should be rounded to whole numbers.
- Do not report dollars in decimals. Round all values to the nearest whole number.
- When precise figures are not available, please provide your best estimates.
- If this business **performs** in-house **R&D** and **outsources R&D**, complete **all** questions.
- If this business **performs** in-house **R&D** and **does not outsource R&D**, complete questions 1-5, 8-19.
- If this business **outsources R&D** and **does not perform** in-house **R&D**, complete questions 1-3, 5-7, 12 & 16-19.
- If this business **does not perform** in-house **R&D** and **does not outsource R&D**, complete questions 1-3, 5, 12 & 16-19.
- Consult the reporting guide at [www.statcan.gc.ca/guides-e](http://www.statcan.gc.ca/guides-e) for further information.

## Business or organization and contact information

1. Please **provide** the business or organization's **legal and operating name**.

Legal name

Operating name (if applicable)

2. Please **provide the contact information** of the designated business or organization **contact person** for this questionnaire.

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

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?

Date B00217  
YYYY MM DD

When does this business or organization expect to resume operations?

Date B00218  
YYYY MM DD → Go to question 4

### 3b. Ceased operations

When did this business or organization cease operations?

Date B00211  
YYYY MM DD

Why did this business or organization cease operations?

B00311

1  Bankruptcy

2  Liquidation

3  Dissolution

4  Other  
Specify the other reasons for ceased operations

B00312

} → Go to question 4

### 3c. Sold operations

When was this business or organization sold?

YYYY MM DD  
B00212

What is the legal name of the buyer?

B00406

→ Go to question 4

### 3d. Amalgamated with other businesses or organizations

When did this business or organization amalgamate?

YYYY MM DD  
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?

B00408

→ Go to question 4

### 3e. Temporarily inactive but will re-open

When did this business or organization become temporarily inactive?

YYYY MM DD  
B00214

When does this business or organization expect to resume operations?

YYYY MM DD  
B00215

Why is this business or organization temporarily inactive?

B00313

→ Go to question 4

### 3f. No longer operating due to other reasons

When did this business or organization cease operations?

YYYY MM DD  
B00216

Why did this business or organization cease operations?

B00314

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4. Please **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.

Please 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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## Business characteristics

### Reporting period

B00206

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

1. What is the end date of this business's fiscal year? .....

**Note:** For this survey, **this business's** fiscal year end date should fall **on or before March 31, 2017**.

Here are **some examples** of fiscal periods that **fall within the targeted dates**:

May 1, 2015 to **April 30, 2016**

July 1, 2015 to **June 30, 2016**

October 1, 2015 to **September 30, 2016**

January 1, 2016 to **December 31, 2016**

February 1, 2016 to **January 31, 2017**

April 1, 2016 to **March 31, 2017**

\*THIS FISCAL YEAR WILL BE REFERRED TO **AS 2016** THROUGHOUT THE QUESTIONNAIRE\*

### Business status

B00419

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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2. What is this business's GST number (9-digit business number)? .....

### Before you begin

#### Differences between Scientific Research and Experimental Development (SR&ED) tax incentive program and this survey

**Include** the following expenditures in this survey:

- capital **R&D** expenditures
- **R&D** expenditures in the social sciences and humanities
- payments for **R&D** performed by other organizations outside Canada.

#### For this survey

##### 'In-house R&D' refers to

Expenditures **within Canada** for **R&D** performed **within this business** by:

- employees (permanent, temporary or casual)
- self-employed individuals or contractors who are **working on-site** on this business's **R&D** projects.

##### 'Outsourced R&D' refers to

Payments made **within or outside Canada** to other companies, organizations or individuals to fund **R&D** performance:

- grants
- fellowships
- contracts.

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## In-house research and development (R&D) expenditures

3. In 2016, 2017 or 2018, did this business have or does it plan to have expenditures for **R&D performed in-house** within Canada?

**Exclude** payments for outsourced (contracted out or granted) **R&D**, which should be reported at question 6 on Outsourced (contracted out or granted) **R&D**.

B05138 1  Yes

2  No → Go to question 5

4. In 2016, 2017 and 2018, what are this business's actual or planned expenditures for **R&D performed in-house** within Canada?

Please report all amounts in **thousands** of Canadian dollars.

Report '0' for no R&D expenditures.

	Made in 2016	Planned in 2017	Planned in 2018
	CAN\$ '000	CAN\$ '000	CAN\$ '000
<b>Current in-house R&amp;D expenditures within Canada</b>			
a. Wages, salaries of permanent, temporary and casual <b>R&amp;D</b> employees <b>Include</b> fringe benefits . . . . .	E45077_sr1 \$ [ ] ,000		
b. Services to support <b>R&amp;D</b> <b>Include</b> services of self-employed individuals or contractors who are working on-site on this business's <b>R&amp;D</b> projects. <b>Exclude</b> contracted out or granted expenditures to other organizations to perform <b>R&amp;D</b> (report in question 6) . . . . .	E45077_sr2 \$ [ ] ,000		
c. <b>R&amp;D</b> materials . . . . .	E45077_sr3 \$ [ ] ,000		
d. All other current <b>R&amp;D</b> costs <b>Include</b> overhead costs . . . . .	E45077_sr4 \$ [ ] ,000		
<b>Total current in-house R&amp;D expenditures within Canada</b>	E45050 \$ [ ] ,000	E45079 \$ [ ] ,000	E45082 \$ [ ] ,000
<b>Capital in-house R&amp;D expenditures within Canada</b>			
e. Software <b>Exclude</b> capital depreciation . . . . .	E45078_sr1 \$ [ ] ,000		
f. Land <b>Exclude</b> capital depreciation . . . . .	E45078_sr2 \$ [ ] ,000		
g. Buildings and structures <b>Exclude</b> capital depreciation . . . . .	E45078_sr3 \$ [ ] ,000		
h. Equipment, machinery and all other capital <b>Exclude</b> capital depreciation . . . . .	E45078_sr4 \$ [ ] ,000		
<b>Total capital in-house R&amp;D expenditures within Canada</b>	E45060 \$ [ ] ,000	E45081 \$ [ ] ,000	E45083 \$ [ ] ,000
<b>2016 - Total in-house R&amp;D expenditures within Canada</b>	E45070 \$ [ ] ,000		

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## Outsourced (contracted out or granted) R&D expenditures

5. In 2016, did this business have **outsourced** (contracted out or granted) **R&D expenditures** within Canada or outside Canada?

**Include:** • contracted out expenditures for **R&D**

- funding or grants provided to other organizations to perform **R&D**.

**Exclude** services of self-employed individuals or contractors who are working on-site on this business's **R&D** projects, which should have been reported earlier as part of in-house **R&D** expenditures in question 4.

B05152\_tp 1  Yes

2  No → Go to question 7

6. In 2016, what were this business's **outsourced** (contracted out or granted) **R&D expenditures** within Canada or outside Canada?

Please report all amounts in **thousands** of Canadian dollars.

**Report '0' for no R&D expenditures.**

	Within Canada	Outside Canada
	CAN\$ '000	CAN\$ '000
a. Parent, affiliated and subsidiary companies .....	E46096_sr14 \$ [ ] ,000	E43039_sr14 \$ [ ] ,000
b. Other companies .....	E46096_sr1 \$ [ ] ,000	E43039_sr1 \$ [ ] ,000
c. Private non-profit organizations .....	E46096_sr2 \$ [ ] ,000	E43039_sr2 \$ [ ] ,000
d. Industrial research institutes or associations .....	E46096_sr3 \$ [ ] ,000	E43039_sr3 \$ [ ] ,000
e. Hospitals .....	E46096_sr4 \$ [ ] ,000	E43039_sr4 \$ [ ] ,000
f. Universities .....	E46096_sr5 \$ [ ] ,000	E43039_sr5 \$ [ ] ,000
g. Federal government departments and agencies .....	E46096_sr6 \$ [ ] ,000	
h. Provincial or territorial government departments, ministries and agencies .....	E46096_sr7 \$ [ ] ,000	
i. Provincial or territorial research organizations .....	E46096_sr8 \$ [ ] ,000	
j. Other organizations e.g., individuals, non-university educational institutions, foreign governments. ....	E46096_sr9 \$ [ ] ,000	E43039_sr6 \$ [ ] ,000
<b>2016 - Total outsourced (contracted out or granted) R&amp;D expenditures</b>	E46210 \$ [ ] ,000	E43030 \$ [ ] ,000

7. In 2017 or 2018, what are this business's **planned outsourced** (contracted out or granted) **R&D expenditures** within Canada or outside Canada?

**Report '0' for no R&D expenditures.**

	Within Canada	Outside Canada
<b>2017 - Total outsourced (contracted out or granted) R&amp;D expenditures</b>	E46097 \$ [ ] ,000	E43041 \$ [ ] ,000
<b>2018 - Total outsourced (contracted out or granted) R&amp;D expenditures</b>	E46098 \$ [ ] ,000	E43042 \$ [ ] ,000



## Geographic distribution of in-house R&D expenditures within Canada in 2016

8. In 2016, how were this business's total expenditures for R&D performed in-house distributed by province or territory?

- Exclude:**
- payments for outsourced (contracted out or granted) R&D, which should be reported in question 6 on Outsourced (contracted out or granted) R&D
  - capital depreciation.

Report all amounts in **thousands** of Canadian dollars.

	Current in-house R&D expenditures	Capital in-house R&D expenditures
	CAN\$ '000	CAN\$ '000
a. Newfoundland and Labrador	E45077_g1 \$ <input type="text"/> ,000	E45078_g1 \$ <input type="text"/> ,000
b. Prince Edward Island	E45077_g2 \$ <input type="text"/> ,000	E45078_g2 \$ <input type="text"/> ,000
c. Nova Scotia	E45077_g3 \$ <input type="text"/> ,000	E45078_g3 \$ <input type="text"/> ,000
d. New Brunswick	E45077_g4 \$ <input type="text"/> ,000	E45078_g4 \$ <input type="text"/> ,000
e. Quebec	E45077_g5 \$ <input type="text"/> ,000	E45078_g5 \$ <input type="text"/> ,000
f. Ontario	E45077_g6 \$ <input type="text"/> ,000	E45078_g6 \$ <input type="text"/> ,000
g. Manitoba	E45077_g7 \$ <input type="text"/> ,000	E45078_g7 \$ <input type="text"/> ,000
h. Saskatchewan	E45077_g8 \$ <input type="text"/> ,000	E45078_g8 \$ <input type="text"/> ,000
i. Alberta	E45077_g9 \$ <input type="text"/> ,000	E45078_g9 \$ <input type="text"/> ,000
j. British Columbia	E45077_g10 \$ <input type="text"/> ,000	E45078_g10 \$ <input type="text"/> ,000
k. Yukon	E45077_g11 \$ <input type="text"/> ,000	E45078_g11 \$ <input type="text"/> ,000
l. Northwest Territories	E45077_g12 \$ <input type="text"/> ,000	E45078_g12 \$ <input type="text"/> ,000
m. Nunavut	E45077_g13 \$ <input type="text"/> ,000	E45078_g13 \$ <input type="text"/> ,000
<b>2016 - Total current and capital in-house R&amp;D expenditures</b>	E45100 \$ <input type="text"/> ,000	E45110 \$ <input type="text"/> ,000

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▲  
**Should equal total current in-house R&D expenditures from question 4**

▲  
**Should equal total capital in-house R&D expenditures from question 4**

## Sources of funds for in-house R&D expenditures in 2016

9. In 2016, what were the **sources of funds** for this business's total expenditures for **R&D performed in-house**?

Please report all amounts in **thousands** of Canadian dollars.

**Include** Canadian and foreign sources.

**Exclude:**

- payments for outsourced (contracted out or granted) **R&D**, which should be reported in question 6 on Outsourced (contracted out or granted) **R&D**
- capital depreciation.

	From within Canada	From outside Canada
	CAN\$ '000	CAN\$ '000
a. Funds from this business		
<b>Include</b> interest payments and other income, funds or tax credits from tax incentives . . . . .	E64047 \$ <input type="text"/> ,000	E63037 \$ <input type="text"/> ,000
b. Funds from parent, affiliated and subsidiary companies . . . . .	E65337 \$ <input type="text"/> ,000	E63044 \$ <input type="text"/> ,000
c. Federal grants		
<b>Include R&amp;D</b> grants or <b>R&amp;D</b> portion only of other grants . . . . .	E64048 \$ <input type="text"/> ,000	
d. Federal contracts		
<b>Include R&amp;D</b> contracts or <b>R&amp;D</b> portion only of other contracts . . . . .	E65049 \$ <input type="text"/> ,000	

### R&D contract work for other companies

	From within Canada	From outside Canada
	CAN\$ '000	CAN\$ '000
e. GST number (9-digit business number (BN) or charitable registration number)		
B71014_nc1 <input type="text"/>	E65048_nc1 \$ <input type="text"/> ,000	E63038_nc1 \$ <input type="text"/> ,000
Legal name B71014_nc2 <input type="text"/>		
f. GST number (9-digit business number (BN) or charitable registration number)		
B71014_nc3 <input type="text"/>	E65048_nc2 \$ <input type="text"/> ,000	E63038_nc2 \$ <input type="text"/> ,000
Legal name B71014_nc4 <input type="text"/>		
g. GST number (9-digit business number (BN) or charitable registration number)		
B71014_nc5 <input type="text"/>	E65048_nc3 \$ <input type="text"/> ,000	E63038_nc3 \$ <input type="text"/> ,000
Legal name B71014_nc6 <input type="text"/>		
h. GST number (9-digit business number (BN) or charitable registration number)		
B71014_nc7 <input type="text"/>	E65048_nc4 \$ <input type="text"/> ,000	E63038_nc4 \$ <input type="text"/> ,000
Legal name B71014_nc8 <input type="text"/>		
i. Other contracts not listed above . . . . .	E65048_nc5 \$ <input type="text"/> ,000	E63038_nc5 \$ <input type="text"/> ,000

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**Geographic distribution of provincial or territorial grants or funding and provincial or territorial contracts**

Include R&D grants/contracts or R&D portion only of other grants/contracts.

**Provincial or territorial grants or funding**

**Provincial or territorial contracts**

**CAN\$ '000**

**CAN\$ '000**

	E64049_g1	E65051_g1:
j. Newfoundland and Labrador .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g2	E65051_g2
k. Prince Edward Island .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g3:	E65051_g3
l. Nova Scotia .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g4	E65051_g4
m. New Brunswick .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g5	E65051_g5
n. Quebec .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g6	E65051_g6
o. Ontario .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g7	E65051_g7
p. Manitoba .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g8:	E65051_g8
q. Saskatchewan .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g9	E65051_g9
r. Alberta .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g10	E65051_g10
s. British Columbia .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g11	E65051_g11
t. Yukon .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g12	E65051_g12
u. Northwest Territories .....	\$ [ ] ,000	\$ [ ] ,000
	E64049_g13	E65051_g13
v. Nunavut .....	\$ [ ] ,000	\$ [ ] ,000

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## R&D contract work for private non-profit organizations

	From within Canada CAN\$ '000	From outside Canada CAN\$ '000
aj. GST number (9-digit business number (BN) or charitable registration number) <small>B71013_nc1</small> <input type="text"/>	<small>E65052_nc1</small> \$ <input type="text"/> ,000	<small>E63039_nc1</small> \$ <input type="text"/> ,000
Legal name <small>B71013_nc2</small> <input type="text"/>		
ak. GST number (9-digit business number (BN) or charitable registration number) <small>B71013_nc3</small> <input type="text"/>	<small>E65052_nc2</small> \$ <input type="text"/> ,000	<small>E63039_nc2</small> \$ <input type="text"/> ,000
Legal name <small>B71013_nc4</small> <input type="text"/>		
al. GST number (9-digit business number (BN) or charitable registration number) <small>B71013_nc5</small> <input type="text"/>	<small>E65052_nc3</small> \$ <input type="text"/> ,000	<small>E63039_nc3</small> \$ <input type="text"/> ,000
Legal name <small>B71013_nc6</small> <input type="text"/>		
am. Other sources e.g., Universities, foreign governments, individuals	<small>E64051</small> \$ <input type="text"/> ,000	<small>E63041</small> \$ <input type="text"/> ,000
<b>2016 - Total in-house R&amp;D expenditures by sources of funds by origin (sum of questions a. to am.)</b>	<small>E60310</small> \$ <input type="text"/> ,000	<small>E60320</small> \$ <input type="text"/> ,000
<b>2016 - Total in-house R&amp;D expenditures (Canadian and foreign sources) (should equal total in-house R&amp;D expenditures from question 4)</b>		<small>E60330</small> \$ <input type="text"/> ,000

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## Fields of research and development for in-house R&D expenditures within Canada in 2016

10. In 2016, how were this business's **total expenditures for R&D performed in-house** within Canada distributed by fields of research and development?

- Exclude:**
- payments for outsourced (contracted out or granted) **R&D**, which should be reported in question 6 on Outsourced (contracted out or granted) **R&D**
  - capital depreciation.

Report all amounts in **thousands** of Canadian dollars.

**Report '0' for no R&D expenditures.**

### Natural and formal sciences

**Exclude** computer sciences, information technology and bioinformatics (to be reported at lines s and t).

	CAN\$ '000
a. Mathematics . . . . .	E45092_y1 \$ [ ] ,000
b. Physical sciences . . . . .	E45092_y2 \$ [ ] ,000
c. Chemical sciences . . . . .	E45092_y3 \$ [ ] ,000
d. Earth and related environmental sciences . . . . .	E45092_y4 \$ [ ] ,000
e. Biological sciences . . . . .	E45092_y5 \$ [ ] ,000
f. Other natural sciences . . . . .	E45092_y6 \$ [ ] ,000
<b>Total natural and formal sciences</b>	E45085 \$ [ ] ,000

### Engineering and technology

**Exclude** software engineering and technology (to be reported at line r).

	CAN\$ '000
g. Civil engineering . . . . .	E45093_y1 \$ [ ] ,000
h. Electrical engineering, electronic engineering and communications technology . . . . .	E45093_y2 \$ [ ] ,000
i. Mechanical engineering . . . . .	E45093_y3 \$ [ ] ,000
i. Chemical engineering . . . . .	E45093_y4 \$ [ ] ,000
k. Materials engineering . . . . .	E45093_y5 \$ [ ] ,000
l. Medical engineering . . . . .	E45093_y6 \$ [ ] ,000
m. Environmental engineering . . . . .	E45093_y7 \$ [ ] ,000
n. Environmental biotechnology . . . . .	E45093_y8 \$ [ ] ,000
o. Industrial biotechnology . . . . .	E45093_y9 \$ [ ] ,000
p. Nanotechnology . . . . .	E45093_y10 \$ [ ] ,000
q. Other engineering and technologies . . . . .	E45093_y11 \$ [ ] ,000
<b>Total engineering and technology</b>	E45086 \$ [ ] ,000

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**Software-related sciences and technology**

CAN\$ '000

r. Software engineering and technology .....	\$	<input type="text" value="E45094_y1"/>	,000
s. Computer sciences .....	\$	<input type="text" value="E45094_y2"/>	,000
t. Information technology and bioinformatics .....	\$	<input type="text" value="E45094_y3"/>	,000
<b>Total software-related sciences and technology</b>	\$	<input type="text" value="E45087"/>	,000

**Medical and health sciences**

u. Basic medicine .....	\$	<input type="text" value="E45084_y1"/>	,000
v. Clinical medicine .....	\$	<input type="text" value="E45084_y2"/>	,000
w. Health sciences .....	\$	<input type="text" value="E45084_y3"/>	,000
x. Medical biotechnology .....	\$	<input type="text" value="E45084_y4"/>	,000
y. Other medical sciences .....	\$	<input type="text" value="E45084_y5"/>	,000
<b>Total medical and health sciences</b>	\$	<input type="text" value="E45120"/>	,000

**Agricultural sciences**

z. Agriculture, forestry and fisheries sciences .....	\$	<input type="text" value="E45095_y1"/>	,000
aa. Animal and dairy sciences .....	\$	<input type="text" value="E45095_y2"/>	,000
ab. Veterinary sciences .....	\$	<input type="text" value="E45095_y3"/>	,000
ac. Agricultural biotechnology .....	\$	<input type="text" value="E45095_y4"/>	,000
ad. Other agricultural sciences .....	\$	<input type="text" value="E45095_y5"/>	,000
<b>Total agricultural sciences</b>	\$	<input type="text" value="E45088"/>	,000

**Social sciences and humanities**

ae. Psychology .....	\$	<input type="text" value="E45096_y1"/>	,000
af. Educational sciences .....	\$	<input type="text" value="E45096_y2"/>	,000
ag. Economics and business .....	\$	<input type="text" value="E45096_y3"/>	,000
ah. Other social sciences .....	\$	<input type="text" value="E45096_y4"/>	,000
ai. Humanities .....	\$	<input type="text" value="E45096_y5"/>	,000
<b>Total social sciences and humanities</b>	\$	<input type="text" value="E45089"/>	,000

**2016 - Total in-house R&D expenditures within Canada by field of research and development (should equal total in-house R&D expenditures from question 4) (sum of questions a. to ai.)**

\$	<input type="text" value="E45130"/>	,000
----	-------------------------------------	------

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## Nature of R&D for in-house R&D expenditures within Canada in 2016

11. In 2016, how were this business's **total expenditures** for R&D performed in-house within Canada distributed by nature of R&D?

**Basic research** is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view.

**Applied research** is original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific, practical aim or objective.

**Experimental development** is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.

### Percentage of total in-house R&D expenditures

a. Basic research .....	E45091_y1	<input type="text"/>	<input type="text"/>	<input type="text"/>	%
b. Applied research .....	E45091_y2	<input type="text"/>	<input type="text"/>	<input type="text"/>	%
c. Experimental development .....	E45091_y3	<input type="text"/>	<input type="text"/>	<input type="text"/>	%
<b>Total percentage</b>					E45140
					<input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="0"/> %

## Results of R&D expenditures from 2014 to 2016

12. During the three (3) years 2014, 2015 and 2016, did this business's **total expenditures** for R&D performed in-house and outsourced (contracted out or granted) within Canada or outside Canada lead to new or significant improvements to the following?

		Yes	No
a. Goods	B10033	1	2
<b>Include</b> goods developed through new knowledge from research discoveries. ....		<input type="radio"/>	<input type="radio"/>
b. Services	B10034	1	2
<b>Include</b> on-going knowledge transfer to physicians, first responders, patients and the general public. . . .		<input type="radio"/>	<input type="radio"/>
c. Methods of manufacturing or producing goods and services .....	B10035	1	2
		<input type="radio"/>	<input type="radio"/>
d. Logistics, delivery or distribution methods for this business's inputs, goods or services. . . . .	B10036	1	2
		<input type="radio"/>	<input type="radio"/>
e. Supporting activities for this business's processes, such as maintenance systems or operations for purchasing, accounting or computing. ....	B10037	1	2
		<input type="radio"/>	<input type="radio"/>

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## In-house R&D personnel in 2016

13. In 2016, how many **in-house R&D personnel** within Canada did this business have in the following **R&D** occupations?

Please report in **full-time equivalents (FTE)**.

**Include** on-site consultants and contractors in line e.

### Full-time equivalent (FTE)

**R&D** may be carried out by persons who work solely on **R&D** projects or by persons who devote only part of their time to **R&D**, and the balance to other activities such as testing, quality control and production engineering. To arrive at the total effort devoted to **R&D** in terms of personnel, it is necessary to estimate the full-time equivalent of these persons working only part-time in **R&D**.

**FTE** (full-time equivalent) = Number of persons who work solely on **R&D** projects + the time of persons working only part of their time on **R&D**.

Example calculation: If out of four scientists engaged in **R&D** work, one works solely on **R&D** projects and the remaining three devote only one quarter of their working time to **R&D**, then:  $FTE = 1 + 1/4 + 1/4 + 1/4 = 1.75$  scientists.

### Researchers and research managers

#### Number of full-time equivalents (FTE)

a. Scientists, social scientists, engineers and researchers

**Include** software developers and programmers . . . . .

B20045\_y1

 . 

B20045\_y2

 . 

b. Senior research managers . . . . .

B20045\_y3

 . 

**Total researchers and research managers**

### R&D technical, administrative and support staff

c. Technicians, technologists and research assistants

**Include** software technicians . . . . .

B20045\_y4

 . 

B20045\_y5

 . 

d. Other **R&D** technical, administrative and support staff . . . . .

B20045\_y6

 . 

**Total R&D technical, administrative and support staff**

### Other R&D occupations

e. On-site **R&D** consultants and contractors . . . . .

B20045\_y7

 . 

B20040

 . 

**Total in-house R&D personnel within Canada (sum of questions a. to e.)**

#### Percentage of software-related activities

14. Of this business's **total in-house R&D personnel** reported above, what percentage performed software-related activities? . . . . .

B20046

   %

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15. In 2016, how were the total in-house R&D personnel distributed by province or territory?  
Please report in full time equivalents (FTE).

	Number of researchers and research managers	Number of R&D technical, administrative and support staff	Number of on-site R&D consultants and contractors
a. Newfoundland and Labrador	B20047_g1	B20048_g1	B20049_g1
b. Prince Edward Island	B20047_g2	B20048_g2	B20049_g2
c. Nova Scotia	B20047_g3	B20048_g3	B20049_g3
d. New Brunswick	B20047_g4	B20048_g4	B20049_g4
e. Quebec	B20047_g5	B20048_g5	B20049_g5
f. Ontario	B20047_g6	B20048_g6	B20049_g6
g. Manitoba	B20047_g7	B20048_g7	B20049_g7
h. Saskatchewan	B20047_g8	B20048_g8	B20049_g8
i. Alberta	B20047_g9	B20048_g9	B20049_g9
j. British Columbia	B20047_g10	B20048_g10	B20049_g10
k. Yukon	B20047_g11	B20048_g11	B20049_g11
l. Northwest Territories	B20047_g12	B20048_g12	B20049_g12
m. Nunavut	B20047_g13	B20048_g13	B20049_g13
<b>Total in-house R&amp;D personnel within Canada</b>	B20050	B20060	B20070
	▲ Should equal total researchers and research managers from question 13	▲ Should equal total R&D technical, administrative and support staff from question 13	▲ Should equal total on-site consultants and contractors from question 13

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## Technology and technical assistance payments in 2016

16. In 2016, how much did this business pay to other organizations for technology and technical assistance?

Report all amounts in thousands of Canadian dollars.

Report '1' for expenditures between \$1 and \$999.

Report '0' for no R&D expenditures.

### Payments to parent, affiliated or subsidiary companies

- a. Patents .....
- b. Copyrights .....
- c. Trademarks .....
- d. Industrial designs .....
- e. Integrated circuit topography .....
- f. Original software .....
- g. Packaged or off-the-shelf software .....
- h. Databases (useful life exceeding one year) .....
- i. Other technology and technical assistance  
Include technical assistance, industrial processes  
and know-how .....

#### Payments made within Canada

CAN\$ '000

E46099\_pc1  
\$  ,000

E46099\_pc2  
\$  ,000

E46099\_pc3  
\$  ,000

E46099\_pc4  
\$  ,000

E46099\_pc5  
\$  ,000

E46099\_pc6  
\$  ,000

E46099\_pc7  
\$  ,000

E46099\_pc8  
\$  ,000

E46099\_pc9  
\$  ,000

E46220  
\$  ,000

#### Payments made outside Canada

CAN\$ '000

E43043\_pc1  
\$  ,000

E43043\_pc2  
\$  ,000

E43043\_pc3  
\$  ,000

E43043\_pc4  
\$  ,000

E43043\_pc5  
\$  ,000

E43043\_pc6  
\$  ,000

E43043\_pc7  
\$  ,000

E43043\_pc8  
\$  ,000

E43043\_pc9  
\$  ,000

E43040  
\$  ,000

**Total payments made to parent, affiliated or subsidiary companies (sum of questions a. to i.)**

### Payments to other companies, organizations or individuals

- j. Patents .....
- k. Copyrights .....
- l. Trademarks .....
- m. Industrial designs .....
- n. Integrated circuit topography .....
- o. Original software .....
- p. Packaged or off-the-shelf software .....
- q. Databases (useful life exceeding one year) .....
- r. Other technology and technical assistance  
Include technical assistance, industrial processes  
and know-how .....

E46101\_pc1  
\$  ,000

E46101\_pc2  
\$  ,000

E46101\_pc3  
\$  ,000

E46101\_pc4  
\$  ,000

E46101\_pc5  
\$  ,000

E46101\_pc6  
\$  ,000

E46101\_pc7  
\$  ,000

E46101\_pc8  
\$  ,000

E46101\_pc9  
\$  ,000

E46230  
\$  ,000

E46260  
\$  ,000

E43044\_pc1  
\$  ,000

E43044\_pc2  
\$  ,000

E43044\_pc3  
\$  ,000

E43044\_pc4  
\$  ,000

E43044\_pc5  
\$  ,000

E43044\_pc6  
\$  ,000

E43044\_pc7  
\$  ,000

E43044\_pc8  
\$  ,000

E43044\_pc9  
\$  ,000

E43050  
\$  ,000

E43060  
\$  ,000

**Total payments made to other companies, organizations or individuals (sum of questions j. to r.)**

**Total payments made to other organizations for technology and technical assistance (sum of questions a. to r.)**

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17. In 2016, how much did this business receive from other organizations for technology and technical assistance?

Report all amounts in thousands of Canadian dollars.  
 Report '1' for expenditures between \$1 and \$999.  
 Report '0' for no R&D expenditures.

**Payments received from parent, affiliated or subsidiary companies**

- a. Patents .....
- b. Copyrights .....
- c. Trademarks .....
- d. Industrial designs .....
- e. Integrated circuit topography .....
- f. Original software .....
- g. Packaged or off-the-shelf software .....
- h. Databases (useful life exceeding one year) .....
- i. Other technology and technical assistance  
 Include technical assistance, industrial processes and know-how .....

**Payments received from within Canada**

**Payments received from outside Canada**

CAN\$ '000

CAN\$ '000

E46102_pc1	\$ [ ] ,000	E63042_pc1	\$ [ ] ,000
E46102_pc2	\$ [ ] ,000	E63042_pc2	\$ [ ] ,000
E46102_pc3	\$ [ ] ,000	E63042_pc3	\$ [ ] ,000
E46102_pc4	\$ [ ] ,000	E63042_pc4	\$ [ ] ,000
E46102_pc5	\$ [ ] ,000	E63042_pc5	\$ [ ] ,000
E46102_pc6	\$ [ ] ,000	E63042_pc6	\$ [ ] ,000
E46102_pc7	\$ [ ] ,000	E63042_pc7	\$ [ ] ,000
E46102_pc8	\$ [ ] ,000	E63042_pc8	\$ [ ] ,000
E46102_pc9	\$ [ ] ,000	E63042_pc9	\$ [ ] ,000

**Total payments received from parent, affiliated or subsidiary companies (sum of questions a. to i.)**

E46240	\$ [ ] ,000	E63030	\$ [ ] ,000
--------	-------------	--------	-------------

**Payments received from other companies, organizations or individuals**

- j. Patents .....
- k. Copyrights .....
- l. Trademarks .....
- m. Industrial designs .....
- n. Integrated circuit topography .....
- o. Original software .....
- p. Packaged or off-the-shelf software .....
- q. Databases (useful life exceeding one year) .....
- r. Other technology and technical assistance  
 Include technical assistance, industrial processes and know-how .....

E46103_pc1	\$ [ ] ,000	E63043_pc1	\$ [ ] ,000
E46103_pc2	\$ [ ] ,000	E63043_pc2	\$ [ ] ,000
E46103_pc3	\$ [ ] ,000	E63043_pc3	\$ [ ] ,000
E46103_pc4	\$ [ ] ,000	E63043_pc4	\$ [ ] ,000
E46103_pc5	\$ [ ] ,000	E63043_pc5	\$ [ ] ,000
E46103_pc6	\$ [ ] ,000	E63043_pc6	\$ [ ] ,000
E46103_pc7	\$ [ ] ,000	E63043_pc7	\$ [ ] ,000
E46103_pc8	\$ [ ] ,000	E63043_pc8	\$ [ ] ,000
E46103_pc9	\$ [ ] ,000	E63043_pc9	\$ [ ] ,000

**Total payments received from other companies, organizations or individuals (sum of questions j. to r.)**

E46250	\$ [ ] ,000	E63040	\$ [ ] ,000
--------	-------------	--------	-------------

**Total payments received from other organizations for technology and technical assistance (sum of questions a. to r.)**

E46270	\$ [ ] ,000	E63050	\$ [ ] ,000
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**ENERGY-RELATED R&D BY AREA OF TECHNOLOGY**

18. In 2016, did this business's **total in-house and outsourced** (contracted out or granted) **R&D expenditures include energy-related R&D** in the following categories?

- |                               |                                      |
|-------------------------------|--------------------------------------|
| 1. Fossil fuels               | 5. Hydrogen and fuel cells           |
| 2. Renewable energy resources | 6. Energy efficiency                 |
| 3. Nuclear fission and fusion | 7. Other energy-related technologies |
| 4. Electric power             |                                      |

**Yes** → Please provide details below

**No** → Go to question 19

**2016 in-house energy-related R&D expenditures**

Energy-related **R&D** by area of technology  
(consult the reporting guide at  
[www.statcan.gc.ca/guides-e](http://www.statcan.gc.ca/guides-e)  
for further information and definitions)

**A**  
Funds from this business

**B**  
Funds from federal,  
provincial or territorial  
government(s)

**C**  
All other Canadian  
sources of funds

**CAN\$ '000**

**1. Fossil fuels**

a) Crude oils and natural gas exploration	E64052_e1_y1 \$ ,000	E64053_e1_y1 \$ ,000	E64054_e1_y1 \$ ,000
b) Crude oils and natural gas production and storage <b>Include</b> enhanced recovery natural gas production.	E64052_e1_y2 \$ ,000	E64053_e1_y2 \$ ,000	E64054_e1_y2 \$ ,000
c) Oil sands and heavy crude oil surface and sub-surface production and separation of bitumen, tailings management	E64052_e1_y3 \$ ,000	E64053_e1_y3 \$ ,000	E64054_e1_y3 \$ ,000
d) Refining, processing and upgrading of fossil fuels	E64052_e1_y4 \$ ,000	E64053_e1_y4 \$ ,000	E64054_e1_y4 \$ ,000
e) Coal production, separation and processing	E64052_e1_y5 \$ ,000	E64053_e1_y5 \$ ,000	E64054_e1_y5 \$ ,000
f) Transportation of fossil fuels	E64052_e1_y6 \$ ,000	E64053_e1_y6 \$ ,000	E64054_e1_y6 \$ ,000

**2. Renewable energy resources**

a) Solar photovoltaics (PV)	E64052_e2_y1 \$ ,000	E64053_e2_y1 \$ ,000	E64054_e2_y1 \$ ,000
b) Solar thermal-power and high-temperature applications	E64052_e2_y2 \$ ,000	E64053_e2_y2 \$ ,000	E64054_e2_y2 \$ ,000
c) Solar heating and cooling	E64052_e2_y3 \$ ,000	E64053_e2_y3 \$ ,000	E64054_e2_y3 \$ ,000
d) Wind energy	E64052_e2_y4 \$ ,000	E64053_e2_y4 \$ ,000	E64054_e2_y4 \$ ,000
e) Bio-energy – biomass production and transport	E64052_e2_y5 \$ ,000	E64053_e2_y5 \$ ,000	E64054_e2_y5 \$ ,000
f) Bio-energy – biomass conversion to transportation fuel	E64052_e2_y6 \$ ,000	E64053_e2_y6 \$ ,000	E64054_e2_y6 \$ ,000
g) Bio-energy – biomass conversion to heat and electricity	E64052_e2_y7 \$ ,000	E64053_e2_y7 \$ ,000	E64054_e2_y7 \$ ,000
h) Other bio-energy	E64052_e2_y8 \$ ,000	E64053_e2_y8 \$ ,000	E64054_e2_y8 \$ ,000
i) Small-Hydro (less than 10 MW)	E64052_e2_y9 \$ ,000	E64053_e2_y9 \$ ,000	E64054_e2_y9 \$ ,000
j) Large-Hydro (greater than or equal to 10 MW)	E64052_e2_y10 \$ ,000	E64053_e2_y10 \$ ,000	E64054_e2_y10 \$ ,000
k) Other renewable energy <b>Include</b> ocean and geothermal.	E64052_e2_y11 \$ ,000	E64053_e2_y11 \$ ,000	E64054_e2_y11 \$ ,000

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2016 in-house energy-related R&D expenditures		2016 outsourced (contracted out or granted) energy-related R&D expenditures		
D All foreign sources of funds	Total in-house R&D (= A+B+C+D)	E Outsourced (contracted out or granted) in Canada	F Outsourced (contracted out or granted) outside Canada	Total outsourced R&D (= E+F)
CAN\$ '000		CAN\$ '000		
<b>1. Fossil fuels</b>				
E63045_e1_y1 \$ ,000	E45097_e1_y1 \$ ,000	E46104_e1_y1 \$ ,000	E43045_e1_y1 \$ ,000	E40430_e1_y1 \$ ,000
E63045_e1_y2 \$ ,000	E45097_e1_y2 \$ ,000	E46104_e1_y2 \$ ,000	E43045_e1_y2 \$ ,000	E40430_e1_y2 \$ ,000
E63045_e1_y3 \$ ,000	E45097_e1_y3 \$ ,000	E46104_e1_y3 \$ ,000	E43045_e1_y3 \$ ,000	E40430_e1_y3 \$ ,000
E63045_e1_y4 \$ ,000	E45097_e1_y4 \$ ,000	E46104_e1_y4 \$ ,000	E43045_e1_y4 \$ ,000	E40430_e1_y4 \$ ,000
E63045_e1_y5 \$ ,000	E45097_e1_y5 \$ ,000	E46104_e1_y5 \$ ,000	E43045_e1_y5 \$ ,000	E40430_e1_y5 \$ ,000
E63045_e1_y6 \$ ,000	E45097_e1_y6 \$ ,000	E46104_e1_y6 \$ ,000	E43045_e1_y6 \$ ,000	E40430_e1_y6 \$ ,000
<b>2. Renewable energy resources</b>				
E63045_e2_y1 \$ ,000	E45097_e2_y1 \$ ,000	E46104_e2_y1 \$ ,000	E43045_e2_y1 \$ ,000	E40430_e2_y1 \$ ,000
E63045_e2_y2 \$ ,000	E45097_e2_y2 \$ ,000	E46104_e2_y2 \$ ,000	E43045_e2_y2 \$ ,000	E40430_e2_y2 \$ ,000
E63045_e2_y3 \$ ,000	E45097_e2_y3 \$ ,000	E46104_e2_y3 \$ ,000	E43045_e2_y3 \$ ,000	E40430_e2_y3 \$ ,000
E63045_e2_y4 \$ ,000	E45097_e2_y4 \$ ,000	E46104_e2_y4 \$ ,000	E43045_e2_y4 \$ ,000	E40430_e2_y4 \$ ,000
E63045_e2_y5 \$ ,000	E45097_e2_y5 \$ ,000	E46104_e2_y5 \$ ,000	E43045_e2_y5 \$ ,000	E40430_e2_y5 \$ ,000
E63045_e2_y6 \$ ,000	E45097_e2_y6 \$ ,000	E46104_e2_y6 \$ ,000	E43045_e2_y6 \$ ,000	E40430_e2_y6 \$ ,000
E63045_e2_y7 \$ ,000	E45097_e2_y7 \$ ,000	E46104_e2_y7 \$ ,000	E43045_e2_y7 \$ ,000	E40430_e2_y7 \$ ,000
E63045_e2_y8 \$ ,000	E45097_e2_y8 \$ ,000	E46104_e2_y8 \$ ,000	E43045_e2_y8 \$ ,000	E40430_e2_y8 \$ ,000
E63045_e2_y9 \$ ,000	E45097_e2_y9 \$ ,000	E46104_e2_y9 \$ ,000	E43045_e2_y9 \$ ,000	E40430_e2_y9 \$ ,000
E63045_e2_y10 \$ ,000	E45097_e2_y10 \$ ,000	E46104_e2_y10 \$ ,000	E43045_e2_y10 \$ ,000	E40430_e2_y10 \$ ,000
E63045_e2_y11 \$ ,000	E45097_e2_y11 \$ ,000	E46104_e2_y11 \$ ,000	E43045_e2_y11 \$ ,000	E40430_e2_y11 \$ ,000

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**2016 in-house energy-related R&D expenditures**

Energy-related R&D by area of technology  
(consult the reporting guide at  
www.statcan.gc.ca/guides-e  
for further information and definitions)

**A**  
Funds from this business

**B**  
Funds from federal,  
provincial or territorial  
government(s)

**C**  
All other Canadian  
sources of funds

**CAN\$ '000**

**3. Nuclear fission and fusion**

a) Nuclear materials exploration, mining and preparation, tailings management	E64052_e3_y1 \$ ,000	E64053_e3_y1 \$ ,000	E64054_e3_y1 \$ ,000
b) Nuclear reactors	E64052_e3_y2 \$ ,000	E64053_e3_y2 \$ ,000	E64054_e3_y2 \$ ,000
c) Other fission	E64052_e3_y3 \$ ,000	E64053_e3_y3 \$ ,000	E64054_e3_y3 \$ ,000
d) Fusion	E64052_e3_y4 \$ ,000	E64053_e3_y4 \$ ,000	E64054_e3_y4 \$ ,000

**4. Electric power**

a) Electric power generation in utility sector	E64052_e4_y1 \$ ,000	E64053_e4_y1 \$ ,000	E64054_e4_y1 \$ ,000
b) Electric power - combine heat and power in industry, buildings	E64052_e4_y2 \$ ,000	E64053_e4_y2 \$ ,000	E64054_e4_y2 \$ ,000
c) Electricity transmission, distribution and storage	E64052_e4_y3 \$ ,000	E64053_e4_y3 \$ ,000	E64054_e4_y3 \$ ,000

**5. Hydrogen and fuel cells**

a) Hydrogen production for process applications	E64052_e5_y1 \$ ,000	E64053_e5_y1 \$ ,000	E64054_e5_y1 \$ ,000
b) Hydrogen production for transportation applications	E64052_e5_y2 \$ ,000	E64053_e5_y2 \$ ,000	E64054_e5_y2 \$ ,000
c) Hydrogen transport and storage	E64052_e5_y3 \$ ,000	E64053_e5_y3 \$ ,000	E64054_e5_y3 \$ ,000
d) Other hydrogen	E64052_e5_y4 \$ ,000	E64053_e5_y4 \$ ,000	E64054_e5_y4 \$ ,000
e) Stationary fuel cells	E64052_e5_y5 \$ ,000	E64053_e5_y5 \$ ,000	E64054_e5_y5 \$ ,000
f) Mobile fuel cells	E64052_e5_y6 \$ ,000	E64053_e5_y6 \$ ,000	E64054_e5_y6 \$ ,000

**6. Energy efficiency**

a) Energy efficiency applications for industry	E64052_e6_y1 \$ ,000	E64053_e6_y1 \$ ,000	E64054_e6_y1 \$ ,000
b) Energy efficiency for residential, institutional and commercial sectors	E64052_e6_y2 \$ ,000	E64053_e6_y2 \$ ,000	E64054_e6_y2 \$ ,000
c) Energy efficiency for transportation	E64052_e6_y3 \$ ,000	E64053_e6_y3 \$ ,000	E64054_e6_y3 \$ ,000
d) Other energy efficiency	E64052_e6_y4 \$ ,000	E64053_e6_y4 \$ ,000	E64054_e6_y4 \$ ,000

**7. Other energy-related technologies**

a) Carbon capture, transport and storage related to fossil fuel production and processing	E64052_e7_y1 \$ ,000	E64053_e7_y1 \$ ,000	E64054_e7_y1 \$ ,000
b) Carbon capture, transport and storage related to electric power production	E64052_e7_y2 \$ ,000	E64053_e7_y2 \$ ,000	E64054_e7_y2 \$ ,000
c) Carbon capture, transport and storage related to industry in end-use sector	E64052_e7_y3 \$ ,000	E64053_e7_y3 \$ ,000	E64054_e7_y3 \$ ,000
d) Energy system analysis	E64052_e7_y4 \$ ,000	E64053_e7_y4 \$ ,000	E64054_e7_y4 \$ ,000
e) All other energy-related technologies	E64052_e7_y5 \$ ,000	E64053_e7_y5 \$ ,000	E64054_e7_y5 \$ ,000

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2016 in-house energy-related R&D expenditures		2016 outsourced (contracted out or granted) energy-related R&D expenditures		
D All foreign sources of funds	Total in-house R&D (= A+B+C+D)	E Outsourced (contracted out or granted) in Canada	F Outsourced (contracted out or granted) outside Canada	Total outsourced R&D (= E+F)
CAN\$ '000		CAN\$ '000		
<b>3. Nuclear fission and fusion</b>				
E63045_e3_y1 \$ ,000	E45097_e3_y1 \$ ,000	E46104_e3_y1 \$ ,000	E43045_e3_y1 \$ ,000	E40430_e3_y1 \$ ,000
E63045_e3_y2 \$ ,000	E45097_e3_y2 \$ ,000	E46104_e3_y2 \$ ,000	E43045_e3_y2 \$ ,000	E40430_e3_y2 \$ ,000
E63045_e3_y3 \$ ,000	E45097_e3_y3 \$ ,000	E46104_e3_y3 \$ ,000	E43045_e3_y3 \$ ,000	E40430_e3_y3 \$ ,000
E63045_e3_y4 \$ ,000	E45097_e3_y4 \$ ,000	E46104_e3_y4 \$ ,000	E43045_e3_y4 \$ ,000	E40430_e3_y4 \$ ,000
<b>4. Electric power</b>				
E63045_e4_y1 \$ ,000	E45097_e4_y1 \$ ,000	E46104_e4_y1 \$ ,000	E43045_e4_y1 \$ ,000	E40430_e4_y1 \$ ,000
E63045_e4_y2 \$ ,000	E45097_e4_y2 \$ ,000	E46104_e4_y2 \$ ,000	E43045_e4_y2 \$ ,000	E40430_e4_y2 \$ ,000
E63045_e4_y3 \$ ,000	E45097_e4_y3 \$ ,000	E46104_e4_y3 \$ ,000	E43045_e4_y3 \$ ,000	E40430_e4_y3 \$ ,000
<b>5. Hydrogen and fuel cells</b>				
E63045_e5_y1 \$ ,000	E45097_e5_y1 \$ ,000	E46104_e5_y1 \$ ,000	E43045_e5_y1 \$ ,000	E40430_e5_y1 \$ ,000
E63045_e5_y2 \$ ,000	E45097_e5_y2 \$ ,000	E46104_e5_y2 \$ ,000	E43045_e5_y2 \$ ,000	E40430_e5_y2 \$ ,000
E63045_e5_y3 \$ ,000	E45097_e5_y3 \$ ,000	E46104_e5_y3 \$ ,000	E43045_e5_y3 \$ ,000	E40430_e5_y3 \$ ,000
E63045_e5_y4 \$ ,000	E45097_e5_y4 \$ ,000	E46104_e5_y4 \$ ,000	E43045_e5_y4 \$ ,000	E40430_e5_y4 \$ ,000
E63045_e5_y5 \$ ,000	E45097_e5_y5 \$ ,000	E46104_e5_y5 \$ ,000	E43045_e5_y5 \$ ,000	E40430_e5_y5 \$ ,000
E63045_e5_y6 \$ ,000	E45097_e5_y6 \$ ,000	E46104_e5_y6 \$ ,000	E43045_e5_y6 \$ ,000	E40430_e5_y6 \$ ,000
<b>6. Energy efficiency</b>				
E63045_e6_y1 \$ ,000	E45097_e6_y1 \$ ,000	E46104_e6_y1 \$ ,000	E43045_e6_y1 \$ ,000	E40430_e6_y1 \$ ,000
E63045_e6_y2 \$ ,000	E45097_e6_y2 \$ ,000	E46104_e6_y2 \$ ,000	E43045_e6_y2 \$ ,000	E40430_e6_y2 \$ ,000
E63045_e6_y3 \$ ,000	E45097_e6_y3 \$ ,000	E46104_e6_y3 \$ ,000	E43045_e6_y3 \$ ,000	E40430_e6_y3 \$ ,000
E63045_e6_y4 \$ ,000	E45097_e6_y4 \$ ,000	E46104_e6_y4 \$ ,000	E43045_e6_y4 \$ ,000	E40430_e6_y4 \$ ,000
<b>7. Other energy-related technologies</b>				
E63045_e7_y1 \$ ,000	E45097_e7_y1 \$ ,000	E46104_e7_y1 \$ ,000	E43045_e7_y1 \$ ,000	E40430_e7_y1 \$ ,000
E63045_e7_y2 \$ ,000	E45097_e7_y2 \$ ,000	E46104_e7_y2 \$ ,000	E43045_e7_y2 \$ ,000	E40430_e7_y2 \$ ,000
E63045_e7_y3 \$ ,000	E45097_e7_y3 \$ ,000	E46104_e7_y3 \$ ,000	E43045_e7_y3 \$ ,000	E40430_e7_y3 \$ ,000
E63045_e7_y4 \$ ,000	E45097_e7_y4 \$ ,000	E46104_e7_y4 \$ ,000	E43045_e7_y4 \$ ,000	E40430_e7_y4 \$ ,000
E63045_e7_y5 \$ ,000	E45097_e7_y5 \$ ,000	E46104_e7_y5 \$ ,000	E43045_e7_y5 \$ ,000	E40430_e7_y5 \$ ,000

DO NOT USE TO REPORT

## Changes or events

19. 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.

B00316\_r1

Outsourcing of **R&D** project(s)

B00316\_r2

Initiation of new **R&D** project(s)

B00316\_r3

Completion of existing **R&D** project(s)

B00316\_r4

Major change in funding of **R&D** project(s) (loss of funding)

B00316\_r5

Major change in funding of **R&D** project(s) (increase in funding)

B00316\_r6

Organizational change that affected **R&D** activities (expansion, reduction, restructuring)

B00316\_r7

Economic change that affected **R&D** activities

B00316\_r11

Lack of availability of qualified **R&D** personnel

B00316\_r8

Other reason — specify:

B00316\_r9

**OR**

B00316\_r10

No changes or events

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## Contact person

1. 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

Last name

Title

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

## Feedback

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

**Include** the time spent gathering the necessary information. ....

Hours Minutes

 

2. We invite your comments about this questionnaire.

B00002

  
  
  
  
  
  
  
  
  
  

**Thank you for completing this questionnaire.**

**Please retain a copy for your records.**

**Visit our website, [www.statcan.gc.ca](http://www.statcan.gc.ca)**

## General information

### Confidentiality

#### Your answers are confidential.

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

#### 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.

#### Provincial and territorial statistical agencies

**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 on in-house research and development expenditures (Question 8) and in-house research and development personnel (Question 15) 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 the statistical agencies of Prince Edward Island, the Northwest Territories and Nunavut. The shared data will be limited to information on in-house research and development expenditures (Question 8) and in-house research and development personnel (Question 15) pertaining to business establishments located within the jurisdiction of the respective province or territory.

#### Natural Resources Canada

For respondents with expenditures on energy-related research and development in technology (fossil fuels, renewable energy resources, nuclear fission and fusion, electric power, hydrogen and fuel cells, energy efficiency, other energy-related technologies), Statistics Canada will also share survey data with the Office of Energy Research and Development (OERD) of Natural Resources Canada. The shared data will be limited to information on Energy Research and Development Expenditures by Area of Technology (Question 18).

You may refuse to share your information with this organization by writing a letter of objection to the Chief Statistician and returning it with the completed questionnaire.

#### Record linkages

To enhance the data from this survey and to minimize the reporting burden, Statistics Canada may combine it 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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