

Research and Development in Canadian Industry, 2013 Industrial Non-profit Organizations

CONFIDENTIAL once completed

Si vous préférez ce questionnaire en français,
veuillez nous appeler au 1-877-992-3999.

Please provide your email address.

| | | |
|-------|---|-------------------------------|
| C0009 | Email address | |
| | Please verify the business name, address and contact name, and correct where needed. | |
| C0001 | Legal name | |
| C0002 | Business name | |
| C0008 | First name | |
| C0028 | Last name | |
| C0004 | Address (number and street) | |
| C0005 | City | |
| C0006 | Province, territory or state | C0007 Postal code or zip code |

INFORMATION FOR RESPONDENTS

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.

Survey purpose

This survey collects data which are essential to assure the availability of pertinent statistical information to monitor science and technology related activities in Canada and to support the development of science and technology policy. Your data will be used to plan and evaluate research and development (R&D) incentive programs and to complete national totals for scientific R&D expenditures and personnel. The results of this survey will be published in **Industrial Research and Development** (catalogue number 88-202-X) and in CANSIM 358-0024, 358-0140, 358-0161 and 358-0205 to 358-0214. Your information may also be used by Statistics Canada for other statistical and research purposes.

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 and data-sharing agreements can be found at the end of this questionnaire.

Reporting period and coverage

This questionnaire should be completed for the **fiscal year ending in 2013**. This report should exclude foreign operations. Please report all currency amounts in thousands of **Canadian dollars**.

Record linkage

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.

Fax or e-mail transmission disclosure

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

Note: There is no risk of disclosure if you are completing a web-based questionnaire online.

Please complete a separate questionnaire for each organization performing research and development (R&D) activities in Canada.

- If your organization performs R&D activities, **all questions should be completed**.
- If your organization does not perform but funds R&D activities, **complete questions 2 to 8, 12 to 15 and Contact information section**.

For further information, please see the **Information and definitions** section at the end of this questionnaire.

Please return the completed questionnaire within **30 days** of receipt.



ANSWERING THE QUESTIONNAIRE

Electronic format for the questionnaire: In an effort to reduce paper use and to meet the needs of respondents, Statistics Canada has developed an Internet based reporting option to complete your questionnaire. If you wish to report electronically, please call 1-877-992-3999.

Avoid call backs: To avoid call backs for verification purposes indicate "0" (zero) in the total line for those questions which do not apply to your organization's activities. Also, if your organization reports a major change in research and development (R&D) spending or funding, please indicate the reason for the change in the "Reasons for Major Change" section.

GENERAL CORPORATE DATA (QUESTIONS 1 AND 2)

1. a) FISCAL YEAR ENDING IN 2013

From: ²⁰¹ Year Month Day To: ²⁰⁴ Year Month Day

b) Please provide the GST number (business number) for the organization reporting R&D expenditures and/or for technology payments in this questionnaire.

0056

2. TOTAL EXPENDITURES OF THIS ORGANIZATION IN 2013

(CAN\$ thousands)
\$,000

R&D DEFINITION

Research and development (R&D) is systematic investigation carried out in the natural sciences and engineering by means of experiment or analysis to achieve a scientific or technological advance.

Research is original investigation undertaken on a systematic basis to gain new knowledge.

Development is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

3. Performed R&D in 2013 ³¹⁰ 1 Yes ³ No

4. Plan to perform R&D in 2014 ³¹¹ 1 Yes ³ No

5. Forecast to perform R&D in 2015 ³¹² 1 Yes ³ No

If you have answered **YES** to any of these questions please go to **question 6**.
If you have answered **NO** to all of these questions please go to **question 12**.

DATA ON R&D PERFORMED – SPENDING, PERSONNEL

6. EXPENDITURES IN CANADA FOR R&D PERFORMED WITHIN THIS REPORTING ORGANIZATION
(Total R&D expenditures made in 2013 should equal total R&D expenditure of questions 8, 9, 10 and 11).

| | Made in 2012 | Made in 2013 | Planned for 2014 | Forecast for 2015 |
|-----------------------------|-------------------|----------------|------------------|-------------------|
| | (CAN\$ thousands) | | | |
| Current expenditures | | | | |
| Wages and salaries* | 504 \$,000 | 501 \$,000 | 502 \$,000 | 503 \$,000 |
| Other current costs** | 514 \$,000 | 511 \$,000 | 512 \$,000 | 513 \$,000 |
| Total current | 524 \$,000 | 521 \$,000 | 522 \$,000 | 523 \$,000 |
| Capital expenditures | | | | |
| Land | 534 \$,000 | 533 \$,000 | 532 \$,000 | 533 \$,000 |
| Buildings | 544 \$,000 | 543 \$,000 | 542 \$,000 | 543 \$,000 |
| Equipment & other | 554 \$,000 | 551 \$,000 | 552 \$,000 | 553 \$,000 |
| Total capital | 564 \$,000 | 561 \$,000 | 562 \$,000 | 563 \$,000 |
| Total | 574 \$,000 | 572 \$,000 | 572 \$,000 | 573 \$,000 |

* Include fringe benefits of persons engaged in R&D.

** Include contracts for services required to carry out R&D (e.g., contracts awarded for drilling needed for heavy oil R&D). Exclude contracts for R&D work itself which should be reported in question 12. Exclude capital depreciation.

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7. **PERSONNEL ENGAGED IN R&D IN CANADA FOR THIS ORGANIZATION IN 2013 (in full-time equivalent*).**

For definitions of personnel engaged in R&D, please see the **Information and definitions** section at the end of this questionnaire.

***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 = Number of persons who work solely on R&D projects and the estimate of 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.

| | Full-time equivalent* |
|--|-----------------------|
| a) Total R&D personnel by occupation | |
| Scientists and engineers | 321 |
| R&D administrators | 322 |
| Total professionals: | 320 |
| Technicians and technologists | 324 |
| Administrative support staff | 325 |
| Total technical and administrative support staff: | 323 |
| Total (cells 320 + 323) | 326 |
| b) Professional R&D personnel by level of education | |
| Without college or university diploma | 327 |
| With college diploma | 328 |
| With university degree: Bachelor | 329 |
| Master | 330 |
| PhD | 331 |
| Total (should equal cell 320) | 332 |
| c) Technical and administrative support R&D personnel by level of education | |
| Without college or university diploma | 333 |
| With college diploma | 334 |
| With university degree: Bachelor | 335 |
| Masters | 336 |
| PhD | 337 |
| Total (should equal cell 323) | 338 |

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8. **PROVINCIAL OR TERRITORIAL INFORMATION FOR R&D PERFORMED WITHIN THIS ORGANIZATION IN 2013**

(Expenditures should be reported in thousands of Canadian dollars).

* For work done on federal lands, please include in the closest province or territory.

** Full-time equivalent (FTE) – See definition in question 7.

| Province or territory where R&D was performed* | R&D expenditures | | R&D personnel | |
|---|-------------------|----------------|--------------------------|--|
| | Current | Capital | Professionals | Technical and administrative support staff |
| | (CAN\$ thousands) | | (full-time equivalent)** | |
| a) Newfoundland and Labrador | 701 \$,000 | 711 \$,000 | 721 | 731 |
| b) Prince Edward Island | 702 \$,000 | 712 \$,000 | 722 | 732 |
| c) Nova Scotia | 703 \$,000 | 713 \$,000 | 723 | 733 |
| d) New Brunswick | 704 \$,000 | 714 \$,000 | 724 | 734 |
| e) Quebec | 792 \$,000 | 793 \$,000 | 794 | 795 |
| f) Ontario | 796 \$,000 | 797 \$,000 | 798 | 799 |
| g) Manitoba | 709 \$,000 | 719 \$,000 | 729 | 739 |
| h) Saskatchewan | 741 \$,000 | 751 \$,000 | 761 | 771 |
| i) Alberta | 742 \$,000 | 752 \$,000 | 762 | 772 |
| j) British Columbia | 743 \$,000 | 753 \$,000 | 763 | 773 |
| k) Yukon | 780 \$,000 | 781 \$,000 | 782 | 783 |
| l) Northwest Territories | 784 \$,000 | 785 \$,000 | 786 | 787 |
| m) Nunavut | 788 \$,000 | 789 \$,000 | 790 | 791 |
| Total (equal to 2013 R&D expenditures reported in question 6 (cells 521 and 561) and 2013 R&D personnel reported in question 7.a) (cells 320 and 323)) | 745 \$,000 | 755 \$,000 | 765 | 775 |

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LOCATION OF R&D ACTIVITIES

9. **FOR YEAR 2013, PLEASE COMPLETE THE FOLLOWING QUESTION FOR EACH POSTAL CODE LOCATION WHERE R&D IS PERFORMED**, provide the postal code, value (in thousands of Canadian dollars) of total internal R&D expenditures (equal to question 6, cell 571) and the number of full-time equivalent R&D personnel (equal to question 7, cell 326).

If you have more than 5 (five) postal code locations, please complete the grid for the postal code locations with the four highest levels of R&D performance and report the residual R&D expenditures and personnel in the fifth row.

* **Full-time equivalent (FTE)** – See definitions in question 7.

| | Postal code | Total R&D expenditures (CAN\$ thousands) | Total full-time equivalent* |
|----|---|---|------------------------------------|
| 1. | 340_1 <input type="text"/> <input type="text"/> | 341_1 \$,000 | 342_1 |
| 2. | 340_2 <input type="text"/> <input type="text"/> | 341_2 \$,000 | 342_2 |
| 3. | 340_3 <input type="text"/> <input type="text"/> | 341_3 \$,000 | 342_3 |
| 4. | 340_4 <input type="text"/> <input type="text"/> | 341_4 \$,000 | 342_4 |
| 5. | 340_5 <input type="text"/> <input type="text"/> | 341_5 \$,000 | 342_5 |

Count R&D projects once in the primary postal code location where R&D is performed in multiple locations. For work done on federal lands, please include in the closest province or territory.

SOURCES OF FUNDS

10. **SOURCES OF FUNDS FOR R&D PERFORMED WITHIN THIS ORGANIZATION IN 2013**

| | Canadian | Non-Canadian |
|--|--------------------------|--------------------------|
| | (CAN\$ thousands) | |
| a) Funds from this organization (i.e. interest and other income) | 801 \$,000 | 811 \$,000 |
| b) Funds from member companies (annual fees, sustaining grants) | | |
| Names of companies (please print full legal name) | GST No. (BN) | (CAN\$ thousands) |
| 802_1 | 807_1 | 803_1 \$,000 |
| 802_2 | 807_2 | 803_2 \$,000 |
| 802_3 | 807_3 | 803_3 \$,000 |
| <i>If more space is required, please use the General comments section (page 13).</i> | Sub-total b) | 819 \$,000 |

Question 10 continues on the next page >

(Question 10 – Continued)

| | | Canadian | |
|---|----------------------------------|-------------------------|---------|
| | | (CAN\$ thousands) | |
| c) Canadian federal government R&D grants and the R&D portion only of any other grants (Exclude any funds or tax credits from tax incentives) | | | |
| Industry Canada: Technology Partnership Program / Strategic Aerospace & Defence Initiative | | 821 | \$,000 |
| National Research Council: Industrial Research Assistance Program | | 822 | \$,000 |
| Atlantic Canada Opportunities Agency | | 823 | \$,000 |
| Canada Economic Development (Quebec Regions) | | 824 | \$,000 |
| Western Economic Diversification Office | | 825 | \$,000 |
| Other grant programs | (please specify): 883_1 | 884_1 | \$,000 |
| | (please specify): 883_2 | 884_2 | \$,000 |
| If more space is required, please use the General comments section (page 13). | | Sub-total c) 820 | \$,000 |
| d) Canadian federal government R&D contracts and the R&D portion only of any other federal government contracts (Exclude any funds or tax credits from tax incentives) | | | |
| Contracting departments: (Payments are only made through Public Works and Government Services Canada for other departments; please specify contracting department) | | | |
| Canadian Space Agency | | 831 | \$,000 |
| National Defence | | 832 | \$,000 |
| Environment Canada | | 839 | \$,000 |
| Other contracts | (please specify): 887_1 | 833_1 | \$,000 |
| If more space is required, please use the General comments section (page 13). | | Sub-total d) 830 | \$,000 |
| e) Provincial government: (grants and contracts) (Exclude any funds or tax credits from tax incentives) | | | |
| | (please specify province): 888_1 | 889_1 | \$,000 |
| | (please specify province): 888_2 | 889_2 | \$,000 |
| If more space is required, please use the General comments section (page 13). | | Sub-total e) 840 | \$,000 |

Question 10 continues on the next page >

(Question 10 – Continued)

| | | Canadian | Non-Canadian |
|--|--------------|---------------------------------------|------------------|
| | | (CAN\$ thousands) | |
| f) R&D contract work for companies | | | |
| Names of companies (please print full legal name) | GST No. (BN) | (CAN\$ thousands) | |
| 863_1 | 873_1 | 864_1 \$,000 | 865_1 \$,000 |
| 863_2 | 873_2 | 864_2 \$,000 | 865_2 \$,000 |
| 863_3 | 873_3 | 864_3 \$,000 | 865_3 \$,000 |
| If more space is required, please use the General comments section (page 13). | | Sub-total f) 850 \$,000 | 860 \$,000 |
| g) Private non-profit organizations R&D contracts | | | |
| Names of organizations (please print full legal name) | GST No. (BN) | (CAN\$ thousands) | |
| 874_1 | 875_1 | 876_1 \$,000 | 877_1 \$,000 |
| 874_2 | 875_2 | 876_2 \$,000 | 877_2 \$,000 |
| 874_3 | 875_3 | 876_3 \$,000 | 877_3 \$,000 |
| If more space is required, please use the General comments section (page 13). | | Sub-total g) 878 \$,000 | 879 \$,000 |
| h) Other organizations (i.e., universities, foreign government, etc.) | | Sub-total h) 872 \$,000 | 882 \$,000 |
| | | Canadian | Non-Canadian |
| | | (CAN\$ thousands) | |
| Sub-totals (a to h) | | 890 \$,000 | 895 \$,000 |
| Total (equal to total 2013 R&D expenditures of question 6 (cell 571)) | | 800 \$,000 | |

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FIELD OF SCIENCE OR TECHNOLOGY

11. PLEASE INDICATE IN WHICH FIELD OF SCIENCE OR TECHNOLOGY YOU PERFORMED R&D IN 2013

* **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 = Number of persons who work solely on R&D projects + the estimate of 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.

| | Total R&D expenditures | R&D personnel |
|--|------------------------|-------------------------|
| | (CAN\$ thousands) | (full-time equivalent)* |
| a) Natural and formal sciences | | |
| i) Mathematics (1.01**) | 905 \$,000 | 906 |
| ii) Computer and information sciences (1.02.01 and 1.02.02) (exclude software) | 999 \$,000 | 999 |
| iii) Physical sciences (1.03**) | 911 \$,000 | 912 |
| iv) Chemical sciences (1.04**) | 913 \$,000 | 914 |
| v) Earth and related environmental sciences (1.05**) | 915 \$,000 | 916 |
| vi) Biological sciences (1.06**) | 917 \$,000 | 918 |
| vii) Other natural sciences (1.07**) | 920 \$,000 | 920 |
| b) Engineering and technology | | |
| i) Civil engineering (2.01**) | 921 \$,000 | 922 |
| ii) Software engineering (2.02.03 and 2.02.09) | 965 \$,000 | 966 |
| iii) Electrical engineering, electronic engineering & information technology (2.02.01 to 2.02.03) | 967 \$,000 | 968 |
| iv) Mechanical engineering (2.03**) | 925 \$,000 | 926 |
| v) Chemical engineering (2.04**) | 927 \$,000 | 928 |
| vi) Materials engineering (2.05**) | 929 \$,000 | 930 |
| vii) Medical engineering (2.06**) | 931 \$,000 | 932 |
| viii) Environmental engineering (2.07**) | 933 \$,000 | 934 |
| ix) Environmental biotechnology (2.08**) | 935 \$,000 | 936 |
| x) Industrial biotechnology (2.09**) | 937 \$,000 | 938 |
| xi) Nano-technology (2.10**) | 939 \$,000 | 940 |
| xii) Other engineering and technologies (2.11**) | 941 \$,000 | 942 |

Question 11 continues on the next page >

(Question 11 – Continued)

| | Total R&D expenditures | | R&D personnel | |
|---|------------------------|----------------|-------------------------|--|
| | (CAN\$ thousands) | | (full-time equivalent)* | |
| c) Medical and health sciences | | | | |
| i) Basic medicine (3.01**) | 943 | \$,000 | 944 | |
| ii) Clinical medicine (3.02**) | 945 | \$,000 | 946 | |
| iii) Health sciences (3.03**) | 947 | \$,000 | 948 | |
| iv) Medical biotechnology (3.04**) | 949 | \$,000 | 950 | |
| v) Other medical sciences (3.05**) | 1103 | \$,000 | 1104 | |
| d) Agricultural sciences | | | | |
| i) Agriculture, forestry, and fisheries (4.01**) | 951 | \$,000 | 952 | |
| ii) Animal and dairy science (4.02**) | 953 | \$,000 | 954 | |
| iii) Veterinary science (4.03**) | 955 | \$,000 | 956 | |
| iv) Agricultural biotechnology (4.04**) | 957 | \$,000 | 958 | |
| v) Other agricultural sciences (4.05**) | 959 | \$,000 | 960 | |
| Total (equal to 2013 R&D expenditures reported in question 6 (cell 571) and R&D personnel reported in question 7.a) (cell 326) | 961 | \$,000 | 962 | |

** These numbers represent the Canada Revenue Agency's codes, in the Guide to Form T661 (Appendix 1), T4088 (E) Rev. 08. For full definitions please refer to Canada Revenue Agency's website <http://www.cra-arc.gc.ca/E/pub/tg/t4088/README.html>.

R&D EXPENDITURES CONTRACTED OR GRANTED TO OTHER ORGANIZATIONS

12. R&D CONTRACTED OR GRANTED EXPENDITURES MADE TO OTHER ORGANIZATIONS

| | In Canada | | Outside Canada | |
|---|-------------------|----------------|----------------|----------------|
| | (CAN\$ thousands) | | | |
| a) Total expenditures made in 2012 for R&D performed by other organizations | 1023 | \$,000 | 1024 | \$,000 |
| b) Total expenditures for R&D performed in 2013 by other organizations | | | | |
| i) Companies | 1002 | \$,000 | 1012 | \$,000 |
| ii) Universities | 1006 | \$,000 | 1016 | \$,000 |
| iii) Other | 1008 | \$,000 | 1018 | \$,000 |
| Total of items 12.b) i) to iii) for 2013 | 1098 | \$,000 | 1099 | \$,000 |
| c) Total expenditures planned for 2014 for R&D performed by other organizations | 1025 | \$,000 | 1026 | \$,000 |
| d) Total expenditures forecast for 2015 for R&D performed by other organizations | 1027 | \$,000 | 1028 | \$,000 |

OTHER EXPENDITURES OR PAYMENTS FOR TECHNOLOGY

An organization can acquire information based on R&D performed in the past by other companies, organizations or individuals. Similarly, it can sell information based on R&D it has performed in the past. In the preceding section, payments are reported for R&D while this R&D is being done. In this section, consider only payments for information and rights derived from R&D performed in the past.

13. EXPENDITURES MADE OR PAYMENTS RECEIVED IN 2013 BY THIS ORGANIZATION.

| | Expenditure made | | Payments received | |
|---|------------------|-----------------|-------------------|-----------------|
| | Within Canada | Outside Canada | Within Canada | Outside Canada |
| (CAN\$ thousands) | | | | |
| a) Reporting organization or member companies | | | | |
| i) Patents | 1029 \$,000 | 1030 \$,000 | 1031 \$,000 | 1032 \$,000 |
| ii) Copyrights | 1033 \$,000 | 1034 \$,000 | 1035 \$,000 | 1036 \$,000 |
| iii) Trademarks | 1037 \$,000 | 1038 \$,000 | 1039 \$,000 | 1040 \$,000 |
| iv) Industrial design and integrated circuit topography designs | 1041 \$,000 | 1042 \$,000 | 1043 \$,000 | 1044 \$,000 |
| v) Other (includes technical assistance, industrial processes and know-how, etc.) | 1045 \$,000 | 1046 \$,000 | 1047 \$,000 | 1048 \$,000 |
| Total | 1049 \$,000 | 1050 \$,000 | 1051 \$,000 | 1052 \$,000 |
| b) Other organizations or individuals | | | | |
| i) Patents | 1053 \$,000 | 1054 \$,000 | 1055 \$,000 | 1056 \$,000 |
| ii) Copyrights | 1057 \$,000 | 1058 \$,000 | 1059 \$,000 | 1060 \$,000 |
| iii) Trademarks | 1061 \$,000 | 1062 \$,000 | 1063 \$,000 | 1064 \$,000 |
| iv) Industrial design and integrated circuit topography designs | 1065 \$,000 | 1066 \$,000 | 1067 \$,000 | 1068 \$,000 |
| v) Other (includes technical assistance, industrial processes and know-how, etc.) | 1069 \$,000 | 1070 \$,000 | 1071 \$,000 | 1072 \$,000 |
| Total | 1073 \$,000 | 1074 \$,000 | 1075 \$,000 | 1076 \$,000 |

Definitions

(equivalent to the Canadian Intellectual Property Office http://www.cipo.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr00503.html)

Patent: A government grant giving the right to exclude others from making, using or selling an invention.

Copyright: Provides protection for literary, artistic, dramatic or musical works (including computer programs), and three other subject matter known as: performance, sound recording, and communication signal.

Trademark: A word, symbol or design (or any combination of these features) used to distinguish the wares and services of one person or organization from those of others in the marketplace.

Industrial design: The visual features of shape, configuration, pattern or ornament (or any combination of these features), applied to a finished article of manufacture.

Integrated circuit topography: The three-dimensional arrangement of the electronic circuits in integrated circuit products or layout designs.

Intellectual property: A form of creative endeavour that can be protected through a patent, trademark, copyright, industrial design or integrated circuit topography.

SURVEY COMPLETION TIME

14. PLEASE INDICATE THE TOTAL TIME IT TOOK YOU TO COMPLETE THIS QUESTIONNAIRE, INCLUDING THE TIME IT TOOK TO GATHER THE INFORMATION.

9910 hour(s)

9909 minute(s)

CONTACT INFORMATION

First name of person who completed this report (please print)

0013

Last name of person who completed this report (please print)

0054

Title

0014

Telephone No.

0017

Extension

0027

Fax No.

0016

E-mail address

0018

Date

0001

YEAR

M

D

DATA ON ENERGY R&D

15. IN 2013, DID THIS REPORTING ORGANIZATION PERFORM OR FUND ANY ENERGY R&D?

1401

1 Yes ➤ Please complete the enclosed "Energy R&D expenditures by area of technology" questionnaire.

3 No ➤ Please complete the **Contact information** section on page 4 of the enclosed "Energy R&D expenditures by area of technology" questionnaire and return with this questionnaire.

REASONS FOR MAJOR CHANGES IF APPLICABLE

Statistics Canada compares current responses with those provided for the last reporting period.

Please describe reasons for any variations with previous information (e.g., expansion, businesses acquired or sold, closures, organizational changes, etc.).

Explaining possible changes or events may prevent follow-up by Statistics Canada.

1412

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GENERAL COMMENTS

We invite your comments below.

| | |
|------|--|
| 9920 | |
| 9913 | |
| 9914 | |
| 9915 | |
| 9916 | |
| 9917 | |
| 9918 | |
| 9919 | |
| 9921 | |

INFORMATION AND DEFINITIONS

Confidentiality

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.

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 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.

Reporting instructions

1. If you are filling a consolidated return for two or more related companies please ensure that consolidated figures are used for all questions (e.g. revenues, employment, R&D expenditures and technology payments). "This reporting company", as used in the questionnaire, covers groups of related companies when a consolidated return is filed.
2. Please answer all questions. When precise figures are not available, please provide your best estimates.
3. **Please return the completed questionnaire within 30 days of receipt.** If you are unable to do so, please inform us of the expected completion date. If you receive more than one copy of this survey questionnaire for the same business, please complete one and attach and return the duplicate(s). If you require assistance in the completion of this questionnaire or have any questions regarding the survey please address all enquiries to:

Statistics Canada
150 Tunney's Pasture Driveway
Ottawa, ON
K1A 0T6
Tel: 1-877-992-3999
Fax: 1-888-883-7999

R&D definition

Research and development (R&D) is systematic investigation carried out in the natural sciences and engineering by means of experiment or analysis to achieve a scientific or technological advance.

Research is original investigation undertaken on a systematic basis to gain new knowledge.

Development is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

Research and development should be considered to be scientific research and experimental development in the natural sciences and engineering only, therefore excluding:

- i. market research, sales promotion,
- ii. quality control or routine analysis and testing of materials, devices or products,
- iii. research in the social sciences or the humanities,
- iv. prospecting, exploring or drilling for or producing minerals, petroleum or natural gas,
- v. the commercial production of a new or improved material, device or product or the commercial use of a new or improved process,
- vi. style changes, or routine data collection.

Examples:

The investigation of electrical conduction in crystals was research. The application of this knowledge to the creation of a new amplifying device – the transistor – was development. The application of the device to the construction of new electrical circuits for television receivers was development. The formulation of new plastic cases for a television receiver is design, not development.

Research and development may be carried out either by a permanent R&D organization (e.g., R&D division) or by an organization generally engaged in any non R&D activity such as engineering or production. In the first case, the R&D organization may spend part of its time on routine testing or trouble shooting or on some other activities which should not be included in R&D. In the second, only the R&D portion of such organization's total activity should be considered.

For more information, see paragraph 63 of the *Frascati Manual, Proposed Standard Practice for Surveys on Research and Experimental Development* (OECD, 2002), and section 37, Reg 2900 of the *Income Tax Act*.

Note:

All expenditures attributable to R&D activities should be reported including expenditures for land and buildings specifically intended to support R&D. This inclusion differs to the treatment of research and development expenditures eligible for the Scientific Research & Experimental Development Tax Incentive Program.

Interpretation

Generally speaking, industrial R&D is intended to result in an invention which may subsequently become a technological innovation. An essential requirement is that the outcome of the work is uncertain, i.e., that the possibility of obtaining a given technical objective cannot be known in advance on the basis of current knowledge or experience. Hence much of the work done by scientists and engineers is not R&D, since they are primarily engaged in "routine" production, engineering, quality control or testing. Although they apply scientific or engineering principles their work is not directed towards the discovery of new knowledge or the development of new products and processes. However, work elements which are not considered R&D by themselves but which directly support R&D projects, should be included with R&D in these cases. Examples of such work elements are design and engineering, shop work, computer programming, and secretarial work.

If the primary objective is to make further technical improvements to the product or process, then the work comes within the definition of R&D. If however, the product, process or approach is substantially set and the primary objective is to develop markets, to do pre-production planning or to get a production, or control system working smoothly, then the activity can no longer be considered as part of R&D even though it could be regarded as an important part of the total innovation process. Thus, the design, construction and testing of prototypes, models and pilot plants are part of R&D. But when necessary modifications have been made and testing has been satisfactorily completed, the boundary of R&D has been reached. Hence, the costs of tooling (design and try-out), construction drawings and manufacturing blueprints, and production start-up are not included in development costs.

Pilot plants may be included in development only if the main purpose is to acquire experience and compile data. As soon as they begin operating as normal production organizations, their costs can no longer be attributed to R&D. Similarly, once the original prototype has been found satisfactory, the costs of other "prototypes" built to meet a special need or fill a very small order are not to be considered as part of R&D.

| ITEM | TREATMENT | REMARKS |
|--|-----------|---|
| Prototypes, pilot plants | Include | As long as the primary objective is to make further improvements. |
| Contracts (questions 10.d) and 10.f)) | Include | All contracts which require R&D. For contracts which include other work, report only the R&D costs. |
| Economic research, market research, management studies | Exclude | All activities in the social sciences. |
| Quality control, routine testing, style changes, minor adaptation of a product to meet a customer's specific requirement | Exclude | Even if carried out by staff normally engaged in R&D. |
| Prospecting, exploratory drilling, development of mines, oil or gas wells | Exclude | Except for R&D projects concerned with new equipment or techniques in these activities, such as in-situ and tertiary recovery research. |
| Engineering | Exclude | Engineering unless it is in direct support of R&D. |
| Design and drawing | Exclude | Design and drawing unless it is in direct support of R&D. |
| Tooling up, trial production, trouble shooting | Exclude | Although R&D may be required as a result of these steps. |
| Patent and licence work | Exclude | All administrative and legal work connected with patents and licences. |

R&D personnel definition

Include independent contractors and employees engaged in R&D related activities while working 'on site' in the business offices, laboratories, factories or other business facilities of the reporting organization.

Professional personnel – are researchers or R&D managers. They can be either scientists or engineers. Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned. Managers and administrators engaged in the planning and management of the scientific and technical aspects of a researcher's work also fall into this category.

Technicians and technologists – Technically trained personnel who assist scientists and engineers in R&D, e.g. chemical technicians, draftspersons. They may be certified by either provincial educational authorities or by provincial or national scientific or engineering associations.

Administrative support staff – Personnel directly engaged in the R&D program, e.g. machinists and electricians in construction of prototypes, or clerks, typists, accountants and storekeepers engaged in the administration or clerical support of R&D organizations.

The results of this survey will be published in **Industrial Research and Development** (catalogue number 88-202-X) and CANSIM 358-0024, 358-0140, 358-0161 and 358-0205 to 358-0214.

<http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=88-202-XWE>

Please make a copy of the completed questionnaire for your records.

Please return the completed questionnaire within 30 days of receipt.

If you are unable to do so, please inform us of the expected completion date.

If you receive more than one copy of this survey questionnaire for the same business, please complete one and attach and return the duplicate(s). If you require assistance in the completion of this questionnaire or have any questions regarding the survey please address all enquiries to:

Statistics Canada
150 Tunney's Pasture Driveway
Ottawa, On K1A 0T6
Tel: 1-877-992-3999
Fax: 1-888-883-7999

**Thank you for completing this questionnaire.
Please retain a copy for your records.**