

Research and Development in Canadian Industry, 2008 Industrial Non-profit Organizations

Si vous préférez ce questionnaire en français, veuillez nous appeler au 1-866-824-5893

Correct as required

Company name

Date and reason for name change

C/O

Address

City

Province/Territory

Postal code

INFORMATION FOR RESPONDENTS

Survey Objective

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, for instance, 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" (Cat. No. 88-202-XIE) and "Science Statistics" (Cat. No. 88-001-XIE).

Authority

This survey is conducted under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S19. Completion of this questionnaire is a legal requirement under the *Statistics Act*. Your participation is appreciated.

Confidentiality

The *Statistics Act* protects the confidentiality of information collected by Statistics Canada. Please see the enclosed reporting guide for more information.

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, who must keep the data confidential and use them only for statistical purposes. For further information on data sharing, please see the enclosed reporting guide.

Reporting period and coverage

This questionnaire should be completed for the **fiscal year ending in 2008**. This report should exclude foreign operations. Please report all amounts in **Canadian currency**.

Data Linkage

To enhance the data from this survey, Statistics Canada may combine it with information from the Research and Development in Canadian Industry Survey with the information your organization provided on the Energy R&D Expenditures by Area of Technology Survey, if applicable, and from other surveys or from administrative sources.

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

- If your records do not permit separate reporting, ensure that questions 1 to 8 and 12 **only include** data on companies performing R&D in Canada.
- If your company performs R&D activities, **all questions should be completed**.
- If your company does not perform but funds R&D, **complete questions 2, 3, 4, 9, 10, 11, 13, 14 and certification**.
- Please see **Reporting Guide** for definitions starting on page 8.

Please return the completed questionnaire within 30 days of receipt.

CERTIFICATION

Name of person who completed this report (<i>please print</i>) 0001		Business address 0002			Date 0004 YY MM DD		
Official position 0003		Postal code 0005		Telephone no. 0006		Ext. 0007	
E-mail address: 0008		GST no. (BN no.) 0009		Fax no. 0010			

GENERAL CORPORATE DATA (QUESTIONS 1 AND 2)

1.a) FISCAL YEAR ENDING IN 2008

From: ⁰²⁰¹ Year: 2 0 0 Month: Day: To: ⁰²⁰⁴ Year: 2 0 0 8 Month: Day:

b) In the fiscal year ending in 2008, did your organization engage in R&D alliances with other organization or firms?

0500 Yes No

2. TOTAL EXPENDITURES OF THIS ORGANIZATION IN 2008

(CAN\$ thousands)
0301

DATA ON R&D PERFORMED (QUESTIONS 3 TO 6)

3. EXPENDITURES FOR R&D PERFORMED WITHIN THIS ORGANIZATION IN CANADA (in thousands of Canadian dollars)

	Current expenditures			Capital expenditures			Total capital	Total
	Wages and salaries*	Other current costs**	Total current	Land	Buildings	Equipment & other		
(CAN\$ thousands)								
a) Made in 2007	0504	0514	0524	0534	0544	0554	0564	0574
b) Made in 2008	0501	0511	0521	0531	0541	0551	0561	0571
c) Planned for 2009	0502	0512	0522	0532	0542	0552	0562	0572
d) Forecast for 2010	0503	0513	0523	0533	0543	0553	0563	0573

e) If applicable, please estimate the percentage of total R&D expenditures (reported above for 2008) attributable to software development***	0580	%
f) If applicable, please estimate the percentage of total R&D expenditures (reported above for 2008) attributable to biotechnology***	0581	%
g) If applicable, please estimate the percentage of total R&D expenditures (reported above for 2008) attributable to prevention, treatment and reuse of pollutants and wastes, and reduction of material and energy use***	0582	%
h) Are there important potential environmental benefits related to the R&D reported for 2008 (apart from any R&D reported in question 3g)?***	0583	<input type="radio"/> Yes <input type="radio"/> No
i) If applicable, please estimate the percentage of total R&D expenditures (reported above for 2008) attributable to advanced materials***	0585	%
j) If applicable, please estimate the percentage of total R&D expenditures (reported above for 2008) attributable to nanotechnology***	0586	%

* 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 8. Exclude capital depreciation.
 *** See Reporting Guide, page 7

4. PERSONNEL OF THIS ORGANIZATION ENGAGED IN R&D (FULL-TIME EQUIVALENT*) (use rounded numbers only)

	Professionals								Supporting staff*		Total R&D personnel
	Scientists and engineers				Senior R&D administrators				Technicians and technologists	Other	
	Bachelors	Masters	Doctorates	Total	Bachelors	Masters	Doctorates	Total			
a) In 2008 (number of FTE)	0601	0611	0621	0631	0641	0651	0661	0671	0681	0691	0694
b) Planned for 2009 (number of FTE)	0602	0612	0622	0632	0642	0652	0662	0672	0682	0692	0693

* See Reporting Guide, page 7.
 ** Divide wages and salaries for 2008 (Question 3b) by total R&D personnel.

Average R&D wages and salaries**

(CAN\$ thousands)

0699

If the average R&D wages and salaries does not seem reasonable, please review the data.

5. REGIONAL INFORMATION ON R&D IN 2008 (Report expenditures in thousands of Canadian dollars)

Establishment name and region where R&D was performed	R&D expenditures		R&D personnel	
	Current	Capital	Professionals	Supporting staff
	(CAN\$ thousands)		(full-time equivalent*)	
<i>Specify province:</i>				
<i>Specify province:</i>				
<i>Specify province:</i>				
Total (equal to 2008 expenditures and personnel reported in questions 4b) and 3a)	0784	0788	0792	0796

* See Reporting Guide, page 7

6. SOURCES OF FUNDS FOR R&D PERFORMED WITHIN THIS ORGANIZATION IN 2008

	Canadian sources	Non-Canadian
	(CAN\$ thousands)	
a) Funds from this organization (i.e. interest and other income)	0801	0811
b) Funds from member companies (annual fees, sustaining grants) Name of companies (please print full legal name and attach additional sheet if necessary)		
802	803	804
Sub-total (b)	0810	0819
c) Funds from companies (R&D contract work) Name of companies (please print full legal name and attach additional sheet if necessary)		
863	864	865
Sub-total (c)	0850	0860

	Canadian sources		Non-Canadian
	(CAN\$ thousands)		
d) Funds from Canadian Federal Government:			
i) R&D grants and the R&D portion only of any other grants.			
Industry Canada (specify):		0821	
National Research Council: Industrial Research Assistance Program		0822	
Atlantic Canada Opportunities Agency		0823	
Canada Economic Development (Quebec Regions)		0824	
Western Economic Diversification Office		0825	
Other grant programs (specify):			
(specify):			
(specify):			
Sub-total (d (i)) ▶		0820	
ii) R&D contracts and the R&D portion only of any other contracts.			
Contracting departments: (Payments are often made through Public Works and Government Services Canada for other departments; please specify contracting department)			
Specify:			
Specify:			
Specify:			
Sub-total (d (ii)) ▶		0830	
e) Funds from Provincial governments (i.e. grants and contracts). Attach additional sheet if necessary.			
Specify province:			
Specify province:			
Specify province:			
Sub-total (e) ▶		0840	
f) Other (i.e. universities, foreign government).		0870	0880
Sub-totals (a to f) ▶		0890	0895
Total (equal to the 2008 grand total expenditures of question 3b) ▶		0800	

DATA ON PAYMENTS FOR R&D (QUESTIONS 7 AND 8)			
7. PAYMENTS FOR R&D PERFORMED BY OTHER ORGANIZATIONS			(CAN\$ thousands)
a) Made in 2007			0904
b) Made in 2008			0901
c) Planned in 2009			0902
d) Forecast in 2010			0903
8. RECIPIENTS OF PAYMENTS FOR R&D PERFORMED IN 2008 BY OTHER ORGANIZATIONS		In Canada	Outside Canada
(CAN\$ thousands)			
a) Companies		1001	1011
b) Universities		1002	1012
c) Other		1003	1013
Sub-totals (a to c) ▶		1004	1014
Total (equal to figure entered in question 7b) ▶		1000	

**DATA ON OTHER PAYMENTS MADE OR RECEIVED
FOR TECHNOLOGY (QUESTION 9)**

A company 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 in the support of 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.

9. PAYMENTS MADE OR RECEIVED IN 2008 BY THIS ORGANIZATION FOR PATENTS (SALE/PURCHASE, LICENSING) KNOW-HOW (UNPATENTED) INVENTIONS, TRADEMARKS (INCLUDING FRANCHISING), PATTERNS, DESIGN, AND R&D TECHNICAL ASSISTANCE	In Canada	Outside Canada
	(CAN\$ thousands)	
a) Payments	1101	1111
b) Receipts	1102	1112

NATURE OF R&D ACTIVITIES – 2008 (QUESTION 10)

Please complete for each R&D establishment. If you have more than one R&D establishment, please photocopy this section and complete for each R&D establishment.

10. R&D Establishment No. (i.e. 1, 2, 3, etc)

Name of R&D establishment:

1204

Address of R&D establishment:

1205

Street

1206 1207 1208

Contact:

City

Prov.

Postal code

1209

Name

1210 1211 - -

Position title

Telephone no.

a) What were the current (non-capital) R&D expenditures of this R&D establishment in 2008? (the total amounts reported for all R&D establishments should equal to Total Current in question 3)	(CAN\$ thousands)
	1220
b) How many scientists and engineers (full-time equivalent) were employed in this R&D establishment in 2008? (the total amounts reported for all R&D establishments should equal Total Scientists and engineers in question 4)	(full time equivalent)
	1221
c) Please estimate, in terms of the percentage of the current R&D expenditures, the approximate distribution of your R&D effort in 2008:	
a. Basic research (no specific practical application in view)	1231 %
b. Applied research (with a specific practical application in view)	1232 %
c. New * product development	1233 %
d. Existing ** product improvement	1234 %
e. New * process development	1235 %
f. Existing ** process improvement	1236 %
g. New * technical services development	1237 %
h. Existing ** technical services improvement	1238 %
	100%

* Please consider new to mean totally or essentially new/unknown to the personnel of your R&D establishment. The product, process or service may exist elsewhere in the world but your R&D is not aided by this fact since your personnel do not have access to the information necessary to avoid any of the normal risks of development.

** Please consider existing to mean that your staff would be improving a product/process/service about which they have the basic information. The product/process/service need not already be provided by your company.

SURVEY COMPLETION TIME (QUESTION 11)

11. PLEASE INDICATE HOW LONG IT TOOK YOU TO COMPLETE THIS QUESTIONNAIRE.

1301 minutes

DATA ON ENERGY R&D (QUESTION 12)

12. IN 2008, DID THIS REPORTING UNIT PERFORM OR FUND ANY ENERGY R&D?

- 1401 Yes ► Please complete the enclosed "Energy R&D expenditures by area of technology" (green) questionnaire.
- No ► Please complete the certification on page 2 of the enclosed "Energy R&D expenditures by area of technology" (green) questionnaire and return with this questionnaire.

COMMENTS

Reasons for Major Changes in Reporting Expenditures and Personnel – In order to eliminate the necessity to verify discrepancies between this report and your last return (2007) please explain any significant changes which might be misconstrued as an error in reporting.

FOR INFORMATION ONLY

Confidentiality

Your answers are confidential.

Statistics Canada is prohibited by law from releasing any information from this survey which would identify a person, business, or organization, without their prior consent. The confidentiality provisions of the *Statistics Act* are not affected by either the *Access to Information Act* or any other legislation. Therefore, for example, the Canada Revenue Agency cannot access identifiable survey data from Statistics Canada.

These survey data will only be used for statistical purposes and will be published in an aggregate form only.

Data-sharing Agreements

To reduce respondent burden, Statistics Canada has entered into data sharing agreements with provincial and territorial statistical agencies and other government organizations, who must 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 is a **Section 11** agreement with the Institut de la statistique du Québec.

The shared data will be limited to business establishments located within the jurisdiction of the respective province or territory.

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 organization, 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:

Science and Technology Surveys Section
 Science, Innovation and Electronic Information Division
 Statistics Canada
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 Ottawa, Ontario
 K1A 0T6
 Tel: 1-866-824-5893
 Email: sieidinfo@statcan.gc.ca
 FAX: (613) 951-9920

R&D Definition (equivalent to Canada Revenue Agency – see information Circular 86-4R3)

Research and development is systematic investigation carried out in the natural and engineering sciences 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 the application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes. If successful, development will usually result in devices or processes which represent an improvement in the “state of the art” and are likely to be patented.

Note

Although the definition of “Scientific Research and Experimental Development” is considered to be the same as R&D, certain expenditures for scientific research and experimental development cannot be claimed for income tax purposes (e.g., land and buildings). All expenditures attributable to R&D are included in this report.

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 units, 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.

R&D Alliance – Agreement where two or more firms or organizations engage in a joint R&D project.

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 manpower, 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 five scientists engaged in R&D work, one works solely on R&D projects and the remaining four devote only one quarter of their working time to R&D, then: $FTE = 1 + 1/4 + 1/4 + 1/4 + 1/4 = 2$ scientists.

Supporting Staff

Technicians and technologists – Technically trained personnel who assist scientist 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.

Other – 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 units.

Software Development – Software refers to the encoded instructions executed by electronic devices including computers for performing operations and functions. See Revenue Canada's Information Circular 97-1 "Administration Guidelines for Software Development".

Biotechnology – Biotechnology is defined as the application of science and engineering in the direct or indirect use of living organisms in their natural or modified forms in an innovative manner in the production of goods and services or to improve existing processes. Biotechnologies can be grouped in the following types of biotechnology: DNA (the coding), Proteins and Molecules (the functional blocks), Cell and Tissue Culture and Engineering, Process Biotechnologies, Sub-Cellular Organisms, Other (Bioinformatics, Environmental biotechnology). Please report Nanobiotechnologies in Question 3(j).

Environmental Protection – Environmental protection is defined as the field of work devoted to the reduction or elimination of pollutants

and wastes (including prevention, treatment and reuse of pollutants and wastes, and reduction of material and energy use). Expenditures made in order to improve employee health and workplace safety are excluded.

Environmental benefits – Environmental benefits include potential energy savings and the reduction in raw materials use or waste generation either from increased efficiency, recycling or closed-loop systems. They can also include design changes resulting in products that are less damaging to the environment in their use or disposal.

R&D in advanced materials – R&D in advanced materials is defined as the systematic investigation carried out in the natural and engineering sciences by means of experiment or analysis in order to gain new knowledge and create new or significantly improved products or processes which use advanced materials such as metals (including superalloys or high purity metals), ceramics and carbon (including optoelectronics such as optical fibres and carbon and graphite products) and polymers (including high performance reinforced plastics and other high performance polymers).

Nanotechnology – Nanotechnology is the manufacturing of devices and products from molecular or nano-scale components with extraordinary properties. Examples of nanotechnology include: nanoparticles, nanomaterials, nanostructures, nanosystems, nanophotonics, nanoelectronics, nanomedicine, nanobiotechnology.

The results of this survey will be published in "**Industrial Research and Development**" (Cat. No. 88-202-XIE) and "**Science Statistics**" (Cat. No. 88-001-XIE). <http://www.statcan.gc.ca/cgi-bin/downpub/freepub.cgi?subject=193#193>

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

Questions :

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THANK YOU FOR YOUR CO-OPERATION