

# Survey On Strategic Priorities For Research And Related Infrastructure In Canada

## **Questionnaire For Federal Research-Intensive Departments And Agencies**

### **Purpose**

The Partnership Group For Science And Engineering (PAGSE) is a co-operative association of twenty-four major Canadian science and engineering societies and associations. PAGSE works to ensure that Canada's research and development capacity is developed to its full potential for maximum economic and social benefit to Canada.

PAGSE has commissioned a survey of selected research-intensive universities, industry sectors and federal science-based departments and agencies, to obtain their views on research and infrastructure priorities. The findings will contribute to the development of an action plan by PAGSE, to selectively increase Canada's commitment to research and innovation.

### **Guidelines For Completing The Questionnaire**

The attached questionnaire seeks information on the research and infrastructure priorities of your department or agency.

Please complete the survey document (questions 1 through 11) for up to ten of the top research priorities in your department or agency. You will need to complete one set of questions for each priority. Please make extra copies as required.

Each chosen priority must represent an important strategic research capability for which your department or agency has established, or will establish, a critical mass of activities. This critical mass is defined as that required to contribute to the attainment of one or more of the three related goals of the Government of Canada's Science and Technology Strategy (1996):

- ◆ advancement of knowledge
- ◆ improved quality of life
- ◆ sustainable job creation and economic growth

"Research infrastructure" is that required to support a strategic research capability.

**Level of Detail**

A strategic research capability and its related infrastructure should be described in sufficient detail. The hypothetical example below illustrates a major field and its sub-fields.

Major Field	Sub-Fields
Plant Biotechnology	<ul style="list-style-type: none"> <li>◆ Herbicide tolerant plants</li> <li>◆ Pest resistant plants</li> <li>◆ Disease-resistant plants</li> <li>◆ Cold tolerant plants</li> </ul>

**Please complete the questionnaires by July 29, 1999 and fax to: (613) 569-1802**

**Questions?**

If you require assistance in completing this questionnaire, or have any questions regarding this survey, please contact Mr. Ozzie Silverman at Secor in Ottawa, at (613) 230-9240, or by e-mail at [osilverman@secorottawa.com](mailto:osilverman@secorottawa.com).

**Please complete this section.**

Name Of Your Department/Agency

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**Survey Contact**

Please indicate the name of the person to be contacted, should we have questions about the responses.

Name	Title
Telephone Number	Fax Number
E-mail	

Strategic Priorities For Research And Related Infrastructure In Canada

1. For your department/agency, describe the research capability that will be strategic for Canada, regionally and/or nationally. It must have the capacity to support wealth-creation and/or enhance the quality of life of Canadians in the next ten years.

Major Field: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sub-Fields: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What applications do you envisage for this research? Please specify.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Describe the infrastructure that will be required to support the research capability that you identified in question 1. Please be specific.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Within what time frame should the research capability identified in question 1 be in place?

- ; next two years
- ; in two to five years
- ; in five to ten years

5. Why will the research capability identified in question 1 be strategically important for the Canadian economy? (check a maximum of five choices)

- ; would create new options for technology development of importance to Canadian industry
- ; needed to capture important future markets

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- ; would be the foundation of a new industry
- ; science/technology needed to maintain competitiveness of existing industries and/or the viability of Canada's resource base
- ; would contribute to the building of industrial clusters
- ; would strengthen regional or local innovation systems
- ; would enhance the core technological competence of existing firms
- ; would educate and train highly qualified personnel needed by industry

6. Why will the research capability identified in question 1 be strategically important for improving the quality of life of Canadians? (check a maximum of five choices)

- ; would make a contribution to productivity improvement
- ; would reduce public sector costs (e.g. health)
- ; essential to support government regulatory and/or policy making responsibilities, or otherwise meet a legislated mandate
- ; other reasons (please specify)

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- ; would improve the health of Canadians
- ; would improve the environment
- ; would improve the safety of Canadians
- ; would lead to greater social cohesion
- ; would improve the education system
- ; would result in major advancement in the quality of life for most people
- ; would result in a substantial improvement in the quality of life for a minority of people
- ; other reasons (please specify)

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7. What is Canada's current position in relation to competitor countries in the strategic research capability identified in question 1? Please check the appropriate boxes.

Criteria	Canada leads competitor countries	Canada is at overall parity with competitor countries	Canada lags competitor countries	Not applicable	Don't Know
♦ the level of scientific excellence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
♦ the level of industry technological capability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
♦ the industrial receptor capability to absorb the research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
♦ industry's ability to innovate through new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
♦ the ability to successfully produce and deliver product to the scale required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
♦ the ability to improve the quality of life through new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Which of the following statements best reflects the resources currently devoted to the research capability identified in question 1?

- ; we intend to move into this field in the near term, but have yet to make a significant investment
- ; we have initiated the research but will need to expand our investment by more than a factor of two to three within the next three years, in order to make useful contributions to wealth creation and/or improving the quality of life of Canadians
- ; we are able to achieve significant socioeconomic impacts with our current level of investment, but additional funding would improve our effectiveness
- ; we are making a strong contribution to wealth creation and improvements in the quality of life of Canadians with our current level of investment

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9. What are the potential constraints on the successful exploitation of the strategic research?  
(check a maximum of five choices)

- ; social/ethical acceptability of the research or its applications
- ; commercialization likely to prove technically and/or financially risky
- ; lack of business models for profitable commercialization
- ; lack of adequate regulatory policies or standards
- ; lack of appropriate government policies
- ; lack of adequate industry investment in R&D
- ; lack of strong strategic linkages among firms and/or research collaboration between firms and research institutions
- ; lack of critical mass of industry/university/government expertise
- ; lack of private sector technology receptor capability
- ; lack of mechanisms to exploit the research for the general public good
- ; inadequate research capabilities in the university system to support industry
- ; shortages of highly qualified personnel
- ; other constraints (please specify)

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10. What are the most likely impacts of not investing in this area of strategic research and related infrastructure? (check a maximum of five choices)

- ; the advancement of knowledge important for Canada will be adversely affected
- ; the education and training of highly qualified personnel will be adversely affected
- ; a few firms will lose competitive advantage
- ; an industry sub-sector will lose competitive advantage
- ; the opportunity to build a new industry sub-sector will not be realized
- ; the growth of regional and/or local economies will suffer
- ; an existing industry sector will become uncompetitive and lose substantial markets
- ; the opportunity to build a new industrial sector will be threatened
- ; sustainable development or health benefits on a limited scale will not be realized
- ; widespread sustainable development or health benefits will not be realized
- ; a significant portion of the population will miss out on social benefits
- ; government will not be in a position to formulate/implement policy or regulations
- ; other impacts (please specify)

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11. In the hypothetical situation that insufficient funding would be available to support all of the priorities in your department or agency, the research capability identified in response to question 1 would rank in:

; the "top 50%" list of priorities

; the "bottom 50%" list of priorities