



INVESTING IN PEOPLE  
RESEARCH &  
INFRASTRUCTURE



**STRATEGIC PLAN**  
2010 - 11






## MESSAGE FROM THE CHAIR

The Province of Newfoundland and Labrador has made a landmark investment in its future. The creation of a Crown corporation with a sole focus on improving R&D performance sends a strong message that Newfoundland and Labrador recognizes the importance of innovation, research, and development in building a strong economy and a strong society. As noted in the Provincial Innovation Strategy: A Blueprint for Prosperity, increased research and development activities drive innovation, create wealth, generate economic growth, and underpin the well-being of the province for future generations. By looking to emerging and growing research areas such as energy, ocean technology, and others, the Research & Development Corporation is taking steps to build strong research and development capacity for the long-term economic well-being of the province.

The Research & Development Corporation has been given a clear mandate. However, it will take considerable effort to build stronger research and development capacity in Newfoundland and Labrador and to realize the benefits of the Government's investment in R&D. This is also a task that we must undertake in partnership with others. The RDC is an engaged and active collaborator that works alongside local stakeholders, regional and national partners, and international collaborators in order to provide leadership, direction, and the necessary capital to expand the province's R&D capacity.

Since its incorporation in 2009, the RDC has worked to support and enhance local R&D initiatives – and grow R&D capacity – by collaborating with industry, academia, and provincial government agencies and departments. We have developed and are delivering programs aimed at building a strong foundation for successful research and development through highly-qualified people,



research, and infrastructure. Our industry-focused programs, R&D Vouchers and R&D Proof of Concept, are specifically designed to help commercial enterprises overcome technical challenges. The Industrial Research and Innovation Fund (IRIF) helps new and existing academic researchers access capital to fund industrially-relevant research. RDC's Ocean Industries Student Research Awards are fostering a new generation of researchers, while our new directed research program, Petroleum R&D Accelerator, will allow industry to leverage R&D investments that address the complex, technical needs of the petroleum industry. These measures are the starting points for improving R&D capacity in this province.

As Chair of the RDC, and on behalf of our Board of Directors, I present this transitional Strategic Plan for 2010-11, as a snapshot of our broader, strategic approach. This plan has been developed in accordance with the legislative requirements of the *Transparency and Accountability Act*, and in consideration of the strategic directions of the Government of Newfoundland and Labrador. The Research & Development Corporation will be tabling a full three-year plan in 2011, which will further develop the strategic directions of the organization.

My signature, herein, indicates the Board's full accountability for the development of the plan and achievement of its planned results.

Sincerely,



M. Jacqueline (Jackie) Sheppard, Q.C.  
Chair, Board of Directors  
Research & Development Corporation



## OVERVIEW


The Research & Development Corporation (RDC) was established to improve R&D in Newfoundland and Labrador. Incorporated under the *Research and Development Council Act* in 2009, the RDC operates as an arm's length entity of the provincial government.

The Research & Development Corporation operates out of offices located at Pippy Place and Kenmount Road, St. John's. There is a current staff complement of 24 employees. For 2010-11, the RDC received a budgetary allocation of \$25 million from the legislature. RDC also assumed responsibility for a one-time \$5 million fund previously held on account at Memorial University for the operation of the Industrial Research and Innovation Fund. There are no additional sources of revenues. In its first full year of operations, the RDC will invest in R&D projects and partnerships among its three client groups: industry, academia, and government.

*The Research & Development Corporation has been charged with providing advice and leadership in working with R&D stakeholders.*

Over the next ten years, the RDC will focus on the following activities:

- Increasing overall R&D funding from all sources
- Pursuing R&D opportunities that are relevant to the local economy
- Targeting sectors that are of strategic importance to Newfoundland and Labrador's economy
- Understanding current and future markets and research needs

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- Responding quickly and flexibly to opportunities
  - Encouraging key stakeholders to collaborate and cooperate in the R&D process

### WHAT IS R&D?

Research and development (R&D) refers to “the creation of new knowledge or the application of existing knowledge to improve products, processes and/or services to affect economic outcomes” (Source: Derived from OECD, “Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development, 2002”).

Gross domestic expenditure on research and development (GERD) is a key R&D indicator that compiles the expenditure on R&D activities as reported by different sectors. In Newfoundland and Labrador, the 2007 GERD statistic was calculated to be only 1 percent of the total GERD in Canada.

Typically this amount is broken down into different performance sectors, as chosen and defined by the Organization for Economic Cooperation and Development (OECD):

- Business enterprises
- Higher education
- Government (Federal and Provincial)
- Private non-profit organizations



## OVERVIEW

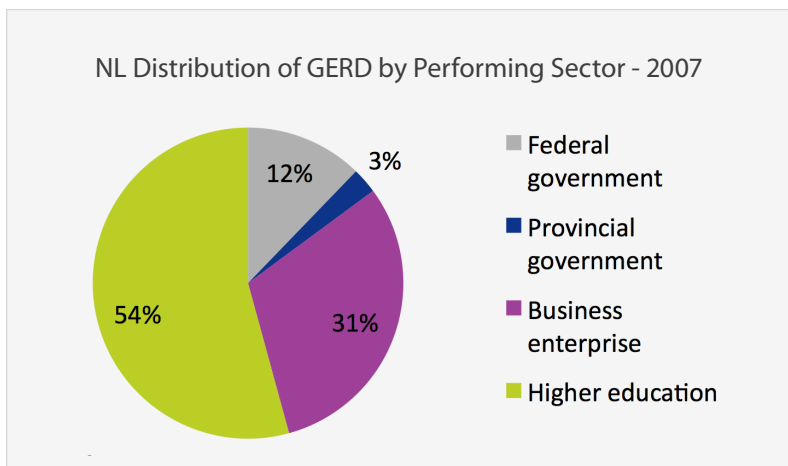
### TRENDS IN R&D

Research and development is an important aspect of the economy. It drives innovation, competition, and economic growth through the development of new products, processes, and services. In Canada today, GERD has reached almost \$30 billion per year.

In Canada, the top performing sector is business enterprise, contributing to over half of the GERD each year. This sector includes all firms, organizations, and institutions whose primary activity is the production of goods and services for sale to the general public. It is important to note that government-owned enterprises, such as Ontario Hydro, are included in this sector. Higher education is the second largest performer comprising over one-third of R&D performance. This sector includes all universities, colleges, and other post-secondary institutions. In general, the public sector funds more R&D than it performs; however, it still out-performs the smallest performance sector, the private non-profit sector (PNP), which contributes less than 5 percent of R&D performance. The PNP sector is small, as it is restricted to those organizations whose primary goal is not to gain profit and which are not controlled by enterprise, higher education, or governments.

The GERD can also be divided by type of science involved in the R&D activities. Most research and development in Canada occurs in the natural sciences and engineering field. This includes mathematical, biological, chemical, and physical sciences, as well as engineering organizations. Over 90 percent of R&D expenditures are classified as this type of science. The rest of research and development

expenditure occurs in the social sciences and humanities. This field includes disciplines such as anthropology, economics, geography, law, political science, psychology, and sociology.

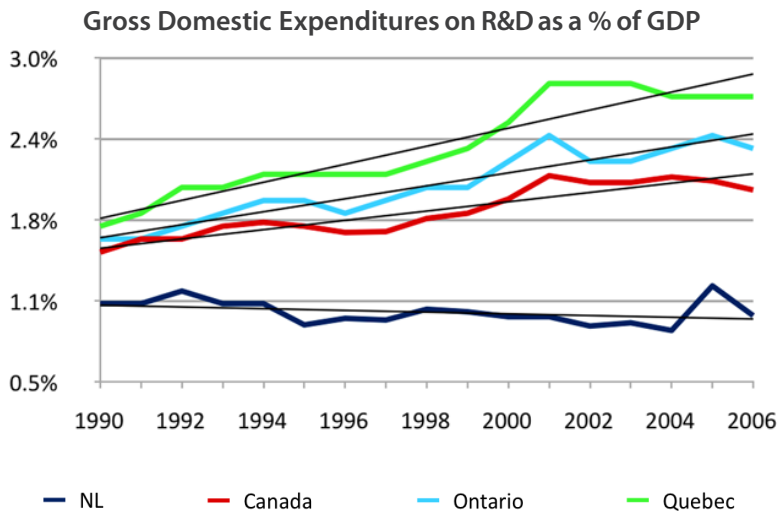


R&D intensity is the ratio of GERD to GDP. For 2008, Canada's GERD/GDP ratio was calculated at 1.84. This is lower than many other countries such as Sweden (3.60), Finland (3.48), USA (2.68), and even the global average of 2.29 (OECD countries). Within Canada, Newfoundland and Labrador had one of the lowest R&D intensity ratios in 2007; at 0.90, it was less than half the Canadian average. This is among the reasons the Government of Newfoundland and Labrador undertook the establishment of the Research & Development Corporation. The largest contributors to Canadian R&D performance are Ontario and Quebec with GERD/GDP ratios of 2.32 and 2.63, respectively for 2007.




## OVERVIEW

Provinces that are performing well in R&D have high levels of business investment and performance. Provinces that are not performing well tend to have lower performance in the business sector. Since the business sector is such an important component of R&D in high-performing provinces, Newfoundland and Labrador is in special need of a focused strategy on R&D in the business sector.



Another important indicator of R&D performance is the number of qualified personnel employed in R&D. This includes researchers, technicians, and other support staff working in this field. Statistics Canada compiled a report on R&D personnel in Canada from 2007 data. The numbers indicated that only 1,880 highly qualified R&D personnel were employed in Newfoundland and Labrador,



representing only 0.8 percent of Canadian R&D personnel. As would be expected from the GERD statistics explained above, Newfoundland and Labrador had a differential concentration of personnel employed in the higher education sector as opposed to the business sector.

In Canada overall, 65 percent of R&D personnel were employed in the business sector and 26 percent were employed in the higher education sector (from 2007). In Newfoundland and Labrador, only 31 percent were employed in business while 54 percent were employed in higher education. Furthermore, the number of researchers as compared to other types of personnel was lower in Newfoundland and Labrador. It is apparent that against all measures, Newfoundland and Labrador would benefit from targeted investment in people, research, and infrastructure.



## STRATEGIC DIRECTION

The 2008 Speech from the Throne announced a desire to position Newfoundland and Labrador as a leader in innovation. This was to be achieved in part through the creation of a new Crown entity to build a stronger knowledge-based economy and plot a course toward sustained prosperity. Recognizing the need for a dedicated and focused approach, the Research & Development Corporation was established pursuant to the *Research and Development Council Act* in 2008, and formally incorporated in 2009.

<b>Title:</b>	R&D Leadership
<b>Strategic Direction:</b>	A stronger knowledge-based economy
<b>Clarifying Statement:</b>	This outcome supports the policy direction of the Provincial Government. It requires systemic intervention to address the following areas: <ul style="list-style-type: none"><li>• R&amp;D Planning &amp; Leadership</li><li>• Business Supports for R&amp;D</li><li>• Academic Supports for R&amp;D</li><li>• Government Supports for R&amp;D</li><li>• Evaluation and Policy Development</li></ul>

The Provincial Innovation Strategy also informs the strategic direction of the Research & Development Corporation. Innovation Newfoundland and Labrador: A Blueprint for Prosperity, outlined four strategic directions: (1) fostering a culture of innovation; (2) building a more competitive Newfoundland and Labrador; (3) strengthening education and skills development; and, (4) supporting and expanding R&D and commercialization. It is this fourth strategic direction that inspired the creation of the Research



& Development Corporation and which guides the RDC to expand R&D in strategic sectors and to address the recognized gaps in applied R&D and commercialization activities.

- Title:** Supporting R&D in Strategic Sectors
- Strategic Direction:** Enhanced research and development capacity
- Clarifying Statement:** This outcome supports the policy direction of the Provincial Government. It requires systemic intervention to address the following areas:
- R&D Planning & Leadership
  - Government Supports for R&D
  - Evaluation and Policy Development



# MANDATE



The mandate of the Research & Development Corporation is to strengthen the focus, quantity, quality, and relevance of research and development undertaken in the province and elsewhere for the long-term economic benefit of the province. This mandate has been articulated in the Research and Development Council Act.



## LINES OF BUSINESS

The Research & Development Corporation has two lines of business:

### 1: R&D CAPACITY ENHANCEMENT:

The RDC has a suite of programs intended to elicit specific actions or responses from its client groups. There are three categories of programs: industry-focused, academic-focused, and provincial public-sector focused. These are intended to address three core areas: people, infrastructure, and research and development activities.

#### Industry-Focused Programming and Services:

Industry programs provide financial investments to businesses to encourage or support R&D activities that can reasonably be expected to benefit the economy of Newfoundland and Labrador. While the RDC's core industry programs, R&D Vouchers and R&D Proof of Concept, are open to all industrial sectors, specialized programming is targeted at the RDC's focus areas of energy and ocean technology.

#### Academic-Focused Programming and Services:

Academic programs are delivered under the Industrial Research and Innovation Fund. These programs are designed to build a strong foundation of quality research and research personnel in the province's publicly-funded post-secondary institutions.

#### Provincial Public Sector-Focused Programs and Services:

Government-focused programs are under development, and expected to be launched in 2010-11. The purpose of this programming is to build R&D linkages across government

departments, industry, and academia, and to strengthen the role of R&D in public policy development and implementation.

PROGRAM	ALIGNMENT WITH RDC PRIORITIES
R&D Vouchers	<ul style="list-style-type: none"> <li>Improves industry access to researchers (technical expertise) and research facilities and equipment</li> <li>Builds industry-academic R&amp;D collaboration</li> </ul>
R&D Proof of Concept	<ul style="list-style-type: none"> <li>Reduces Small- and Medium-sized Enterprise (SME) technical and financial risk of pre-commercial R&amp;D</li> <li>Increases capacity of the company as an R&amp;D performer</li> </ul>
Petroleum R&D Accelerator	<ul style="list-style-type: none"> <li>Accelerates R&amp;D in the petroleum industry by building long-term, sustainable R&amp;D capacity, and maximizes petroleum resource development</li> </ul>
R&D Infrastructure Call for Proposals	<ul style="list-style-type: none"> <li>Strengthens the R&amp;D capacity of educational institutions and research facilities</li> <li>Builds a world-class working environment for researchers that will develop, attract, and retain highly qualified researchers</li> <li>Fosters industrial outreach and industry-academic R&amp;D collaboration, including local, national, and international partnerships</li> </ul>
Ocean Industries Student Research Awards	<ul style="list-style-type: none"> <li>The highly-qualified people required by industry and the next generation of R&amp;D leaders</li> </ul>
Industrial Research and Innovation Fund (IRIF)	<ul style="list-style-type: none"> <li>Strengthens institutional R&amp;D capacity</li> <li>Provides funding for new researchers (Ignite R&amp;D)</li> <li>Leverages against federal sources (Leverage R&amp;D)</li> <li>Supports industry-academic collaboration (Collaborative R&amp;D)</li> </ul>






## LINES OF BUSINESS

To complement its suite of R&D programs, the RDC is continually building new programs to meet identified needs. This is an intensive process that involves stakeholder consultations, statistical and economic analysis, program design, and evaluation. New programs that meet broad-based and commonly recognized gaps in the provincial R&D landscape are typically added to the RDC's repertoire. Bespoke programs that are intended to meet specific, targeted needs of individual sectors or sub-sectors may be delivered less frequently.

Operationally, the RDC supports capacity enhancement through corporate and financial services including financial management, human resources, information management, legal, marketing, communications, policy, and evaluation.



## 2: FOCUS R&D PERFORMANCE AND SCHOLARSHIP IN THEMATIC PRIORITY AREAS:

Stakeholder consultations carried out in 2008 recognized that while there are many opportunities for R&D growth in Newfoundland and Labrador, it is critical that the RDC selectively choose thematic priority areas. Priority areas are selected based on resource availability, market potential, and whether there is potential for a competitive or comparative advantage for the province of Newfoundland and Labrador. Focusing RDC investments in thematic priority areas will maximize the impact of our efforts and economic return on investment.

To encourage R&D performers and other funders to invest and direct efforts toward RDC's priority areas, RDC has developed specific targeted instruments to present incentives and communicate mutual benefits to all stakeholders.

Two instruments in particular include the Ocean Industries Student Research Awards program and the Petroleum R&D Accelerator directed research program. Each are designed to encourage an increase in research and development activities in thematic priority areas.



## PRIMARY CLIENTS

Research and development is a very specialized function that not all businesses, academics, or government departments will undertake. RDC's primary clients are R&D performers, R&D funders, and the end-users of research and development solutions, products, processes, and services:

- Industry
- Small and medium-sized businesses that conduct or use research and development
- Publicly-funded post-secondary institutions
- Not-for-profit entities that conduct or engage in research and development
- Provincial Government departments and agencies that perform research and development
- Provincial Government departments and agencies that require R&D policy advice or support
- Other R&D funding agents, provincially, nationally, and internationally
- Students
- Researchers



## GOVERNANCE

The Research & Development Corporation's Board of Directors consists of 7 to 11 members. The current constitution of the Board follows:

Ms. M. Jacqueline Sheppard, Chair

Dr. Lawrence Cochrane, Vice-Chair

Mr. Alan Brown, Director

Mr. Gary Dinn, Director

Dr. Ray Gosine, Director

Dr. Kari Kveseth, Director

Dr. Terry-Lynn Young, Director

These members meet the statutory requirements for Directors with research, business, and academic expertise.

## VALUES

The following values of the Research & Development Corporation represent the core priorities of the organization's culture, and guide behaviour and decision-making within the corporation.



### EXCELLENCE

- We pursue excellence and quality in all endeavours.
- We recruit and retain highly-qualified people.
- We develop programs, execute projects, and deliver superior service for our clients and partners.
- We exceed expectations.
- We set new standards for excellence.



- FOCUS**
- We focus our efforts on R&D projects, programs, services, and initiatives that are relevant to the Province of Newfoundland and Labrador.
  - We build on R&D strengths that create economic output for the province.
  - We work to achieve long-term outcomes.

- INTEGRITY**
- Trust, integrity, and respect are foundations for every interaction.
  - We apply the highest ethical standards to our conduct.
  - We respect and protect the commercially sensitive information of our clients.
  - We are a responsible corporate citizen, committed to the health, safety, and well-being of people and the environment.

- COLLABORATION**
- We build partnerships and teams with co-workers, clients, and stakeholders.
  - We communicate effectively with our R&D stakeholders and clients.
  - We draw upon external and internal strengths to create a superior product/service.

- ACCOUNTABILITY**
- We are accountable to the public, clients, stakeholders, and employees.
  - Every action is taken in acknowledgement of our accountability to the public.
  - We accept responsibility for our actions.



# VISION



The Research & Development Corporation envisions a robust provincial economy where increased R&D activities play a major role in driving innovation, creating wealth, and increasing economic growth in Newfoundland and Labrador for future generations.






## GOALS

### 1: CATALYZING R&D IN THEMATIC PRIORITY AREAS

Thematic priority areas are vitally important for the future well-being of Newfoundland and Labrador. These areas present a potential strategic competitive advantage for research and development in this province. The Research & Development Corporation has been charged with strengthening the focus, quantity, quality, and relevance of research and development in Newfoundland and Labrador for the long-term economic benefit of the province. It must do so within a clearly defined funding envelope and with finite resources. RDC's stakeholders told us during our consultation sessions that we should not strive to be all things to all people; they reiterated that we must choose thematic priority areas to focus our efforts in order to be successful in carrying out our mandate. In catalyzing R&D in thematic priority areas, the Research & Development Corporation supports the strategic directions of the Provincial Government, as articulated in the Provincial Innovation Strategy.

Two areas of interest for Newfoundland and Labrador, from a sectoral perspective, are ocean technology and energy. For centuries, Newfoundlanders and Labradorians have earned their living from the waters around us. A natural, strategic competitive advantage is derived from our proximity to this resource. Our province is also being recognized as an energy warehouse. Between our hydrocarbon resources and renewable energy sources, we are well positioned to avail of research and development opportunities in the energy field. These are natural focus areas for the RDC's activities, which are intended to have a long-term impact on the well-being of Newfoundland and Labrador.



Within the scope of this 2010-11 transitional plan, the RDC will target specific actions to catalyze R&D in thematic priority areas, with a particular focus on the energy sector. Future plans will expand to other thematic priority areas.

**Goal:** By 2014, the Research & Development Corporation will have catalyzed research and development activities in thematic priority areas in Newfoundland and Labrador.

**Objective:** By March 31, 2011, the Research & Development Corporation has contributed to an increase in R&D activity in the energy sector in Newfoundland and Labrador.

**Measure:** Increased R&D effort in the energy sector from all sources

**Indicators:**

- Increased R&D expenditures in the energy sector in NL
- Increased R&D collaboration and partnerships in energy sector in NL
- Increased research projects in the energy sector in NL



## GOALS


### 2: BUILDING A STRONG FOUNDATION FOR R&D

Research and development plays a critical role in innovation, industry and enterprise competitiveness, and overall economic performance. In order to position this province to reap benefits from R&D and innovation activities, we must increase the quantity of R&D that occurs within Newfoundland and Labrador. Highly-qualified people, research, and infrastructure are the building blocks of a successful research and development environment. The Research & Development Corporation strives to improve the foundational conditions for research and development in Newfoundland and Labrador by strengthening these building blocks.

The Research & Development Corporation will direct efforts to improve all three of these areas, with a focus on human resource capacity for the term of this transitional plan.

**Goal:** By 2014, the Research & Development Corporation will have improved Newfoundland and Labrador's foundational research and development building blocks: highly-qualified people, research, and infrastructure.

**Objective:** By March 31, 2011, the Research & Development Corporation has funded student researchers in thematic priority areas.



**Measure:** Increased student researchers in thematic priority areas studying at local post-secondary institutions.

- Indicators:**
- Increased number of undergraduate students enrolled in research programs at provincial post-secondary institutions
  - Increased number of graduate students enrolled in research programs at provincial post-secondary institutions

*The Research & Development Corporation will be tabling a full, three-year strategic plan in 2011, which will further develop the strategic directions of the organization.*

