

ACTION

Support for the Biotechnology Sector

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INTRODUCTION

The Québec economy has become considerably stronger and more diversified in recent years, with our businesses posting a remarkable performance on foreign markets. Their achievements are due largely to the rapid development of knowledge industries: by making a successful transition toward the knowledge-based economy, Québec has managed to position itself strategically in sectors of activity where growth is strong, and thus turn to account a labour market that is one of the most highly skilled in the world.

Québec's strong presence in the knowledge-based economy is due essentially to three sectors of activity – the aerospace industry, information and communication technologies and the pharmaceutical industry.

Biotechnology constitutes a new niche of excellence with vast potential, for which Québec shows considerable promise, and the Québec government has already devoted substantial efforts to bolstering growth in this sector. The **Supplement to the 2002-2003 Budget** presented by the Deputy Prime Minister and Minister of State for Economy and Finance affords an opportunity to launch new and important initiatives¹ in this respect.

The government will allocate a total of \$118 million to the biotechnology sector for 2002-2003 and the subsequent two fiscal years. This strong support will facilitate business start-ups, boost research efforts and help fund the development and marketing of biotechnology products.

1 The measures introduced as part of this Supplement are described in detail in the document entitled "Additional Information on the Supplement to the Government's Budgetary Policy – 2002-2003," which is the official reference in this respect.

THE MEASURES INTRODUCED

The government is allocating \$118 million to support the development of the biotechnology sector. The measures introduced are as follows:

- The new Bio-Levier capitalization loan program is being implemented. Under this program, an envelope of \$100 million will be made available to biotechnology companies as of 2002-2003 to support their product development and marketing activities.
- Two new biotechnology development centres are being created in Sherbrooke and Saint-Hyacinthe. Both these centres will receive the same tax benefits as the Centre de développement des biotechnologies de Laval, which is currently under construction. The government will invest \$9.5 million over the next three fiscal years in tax measures to benefit companies that set up business in these centres.
- A measure to encourage the development of nutraceuticals and functional foods² in the Québec City region is being introduced. The tax incentives in favour of eligible businesses represent an investment of \$8 million over the next three fiscal years.

SUMMARY OF MEASURES

(in millions of dollars)

	Location	The government's financial commitments	Cost		
			2002-2003	2003-2004	2004-2005
Budgetary measure					
Bio-Levier capitalization loan program	All of Québec	100.0	25.0 ¹	-	-
Fiscal measures					
Biotechnology development centres ²	Sherbrooke and Saint-Hyacinthe	9.5	-	2.5	7.0
Nutraceuticals	Québec City region	8.0	-	2.0	6.0
Total	n/a	117.5	25.0	4.5	13.0

¹ Amount of the provision for bad debts.

² This assumes that the fiscal measure with respect to manufacturing and commercialization will apply in full to both sites.

² Nutraceuticals and functional foods are food-based products that have proven health benefits.

BIOTECHNOLOGY: A SECTOR WITH POTENTIAL

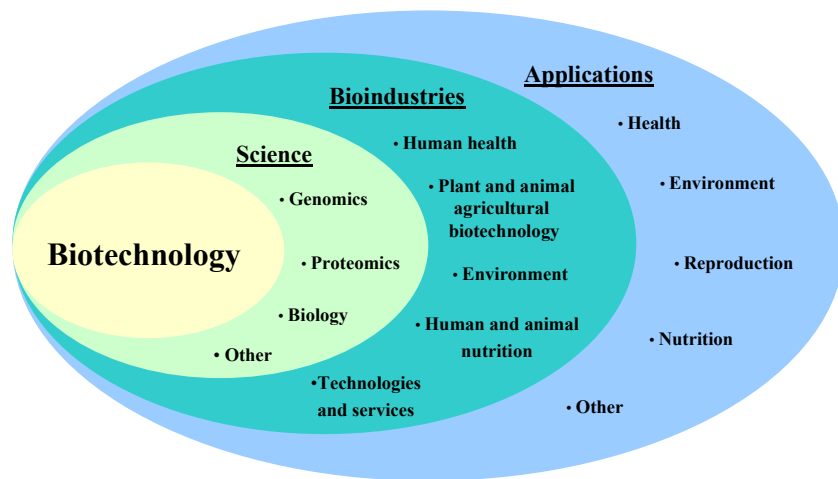
Biotechnology can be defined as the application of technologies to living organisms for the purpose of developing foods, medication and other innovative products.

Specific industrial activities, numerous applications

The biotechnology sector can be broken down into several industrial segments, according to the content and aim of the technologies being developed. There are bioindustries that deal with human health, plant and animal agricultural biotechnology, the environment, human and animal nutrition, and technological products and services.

Once fully developed, biotechnology has numerous applications that impact directly on the quality of life. It facilitates disease diagnosis and response; makes healthy foods and other healthful products available; and leads to the implementation of environmentally friendly biotechniques and renewable fuels that reduce greenhouse gas emissions.

BIOTECHNOLOGY: INDUSTRIES AND APPLICATIONS



Sources: Adapted from Innovitech inc. and the Chaire de gestion en bio-industries, ESG-UQAM.

Rapid development potential

Biotechnology is one of the sectors of the new economy that will grow the most rapidly in the medium term. According to certain forecasts, the global market for products and services linked to the biotechnology sector should expand 30% annually, to reach a total of \$544 billion in 2009.³

This growth potential can be explained as follows:

- In terms of both basic and applied research, the biotechnology sector is progressing extremely rapidly. Numerous discoveries have been made in this area, and the associated practical applications are increasing at a brisk pace.
- In most industrialized countries, the applications in question correspond to pressing needs, for example, in the areas of human health and the environment – and, more generally, with respect to efforts to improve the quality of life.

3 Source: Emerging Strategy to Accelerate Growth in Medical and Non-Medical Sciences, McKinsey & Company - September 2001.

QUÉBEC'S ASSETS

Québec is poised to position itself favourably in the biotechnology sector thanks to numerous assets. For example:

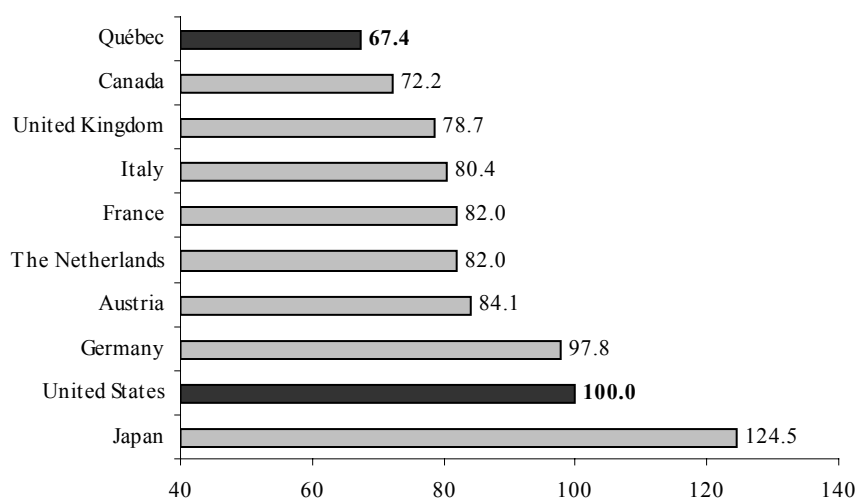
- Québec already boasts a thriving biotechnology sector: in 1999, it was home to over 100 businesses and 2 600 highly specialized jobs.⁴
- Several major research centres are located in Québec, including the INRS - Institut Armand-Frappier, the Clinical Research Institute of Montreal, the Institut de pharmacologie de Sherbrooke, the research centre of the Centre hospitalier de l'Université Laval and the faculty of veterinary medicine of the Université de Montréal in Saint-Hyacinthe.
- A number of Québec research funds are directly involved in biotechnology development, for example, the Fonds de la recherche en santé du Québec and the Fonds pour la formation de chercheurs et l'aide à la recherche.
- Québec can rely on a solid network of university hospital centres for assistance with some of its research activities in the biotechnology sector.
- The pharmaceutical industry, a viable presence in Québec, carries out activities with a biotechnological focus. These activities make Montréal the third-largest centre in North America in terms of the number of jobs in this sector as a proportion of the total population.⁵

4 Source: Statistics Canada. Practices and activities of Canadian biotechnology firms: Results from the Biotechnology Use and Development Survey – 1999.

5 Source: E&B Data – June 2000.

In general, Québec boasts one of the world's most enviable corporate environments. According to a study by the firm KPMG, the costs of establishing and operating a business in the biomedical industry are 7% higher in Canada as a whole, 48% higher in the United States and 85% higher in Japan.

KPMG COMPETITIVENESS INDEX – BIOMEDICAL INDUSTRY – 2002
COSTS OF ESTABLISHING AND OPERATING A BUSINESS
(United States = 100)



Sources: KPMG, *The Competitive Alternatives: A Comparison of Business Costs in North America, Europe and Japan - 2002*, and ministère des Finances du Québec. The sector used in the study involves a clinical facility that develops and tests biomedical products and procedures.

Note: The index for Québec is calculated by the ministère des Finances du Québec on the basis of the KPMG study for the cities of Montréal, Québec and Sherbrooke.

THE CHALLENGES

The development of a strong, dynamic biotechnology sector in Québec is contingent on the existence of high-performing businesses that are capable of attaching due value to research efforts and have sufficient financial resources to develop and market their products.

Biotech companies must go through a long, costly and high-risk development process before their products become profitable.

- Relatively low costs are incurred for the pre start-up phase, during which the research approach is defined.
- The start-up phase, which corresponds to the carrying out of applied research, requires heavier investments.
- Even greater investments are called for once the company embarks upon the development and marketing phase for a given product.

The resources currently available to Québec businesses that have reached the development and marketing phase are insufficient to allow them to continue growing, thereby limiting the economic spinoffs Québec hopes to gain from these investments.

DEVELOPMENT PHASES – BIOTECHNOLOGY COMPANIES

		Development phases			
		Pre start-up	Start-up	Development and marketing	
Financing	<u>Companies' activities and financial needs</u>	• Idea and development of the research process	• Applied research	• Identification of targets • Identification of procedures • Validation • Patent application	• Optimization • Pre-clinical testing • Clinical trials • Regulation and marketing
		• Less than \$2 million	• \$2 million - \$10 million	• \$10 million - \$100 million	• \$100 million - \$600 million
	<u>Tax, financial and technical assistance</u>	• Scientific research and experimental development tax credit			
		• Private, government and institutional venture capital		• Private, government and institutional venture capital	
	• Universities • Research centres	Additional support			

Source: Ministère des Finances du Québec.

EXISTING TOOLS

In Québec, a number of tools have gradually been implemented to support biotechnology companies as they progress through each development phase.

- Tax assistance for scientific research and experimental development (R&D), private, government and institutional venture capital and the collaboration of universities and research centres provide major support to businesses in the pre start-up phase, when the research process is defined and put in place.
 - The tax assistance available to Québec businesses for research and development is among the most generous in the world.
 - The Québec government has also supported the creation of a number of significant venture capital funds.
- These same R&D tax assistance and venture capital measures sustain businesses during the start-up phase, when applied research activities are carried out.
- This support also comes into play in the product development and marketing phase.

Public infrastructure investments

The public-sector investment acceleration program

This program, introduced on November 1, 2001 on the occasion of the 2002-2003 Budget Speech, is designed to bolster economic activity and employment. It has enabled the ministère de la Recherche, de la Science et de la Technologie to fund two infrastructure projects that are directly linked to the biotechnology sector. These projects, currently under way, are:

- the expansion of the Clinical Research Institute of Montreal (an investment of \$20 million);
- the setting up of a biotechnology development centre in Sherbrooke (an investment of \$2.6 million).

Québec government departments

Through their investment programs, the departments of the Québec government, in conjunction with the Canada Foundation for Innovation, have provided assistance to several biotechnology projects.

The following Québec-based projects have received funding:

- the McGill University Health Centre and Life Sciences Complex;
- the Centre national des primates pour le développement de vaccins et de médicaments of the INRS - Institut Armand-Frappier;
- the Centre de recherche en infectiologie of the Université Laval and the Centre hospitalier de l'Université Laval.

ADDITIONAL SUPPORT

In the biotechnology sector, current support measures do not allow businesses to resolve all of the problems that crop up during the development of a given product.

- Given the risks involved, biotechnology companies do not necessarily attach special importance to preliminary research efforts. Their involvement in such efforts, or the creation of new businesses for that purpose, must be stimulated – and it is essential that these companies enjoy a special partnership with the research centres whose findings they will be developing.

The creation of the Centre de développement des biotechnologies de Laval, announced in the 2001-2002 Budget Speech, was intended as an initial solution to this problem. The purpose of this centre is to bring together, on a designated site, businesses piloting innovative projects that often stem from university research activities. The Carrefours de la nouvelle économie (new economy centres), set up in 1999 in favour of the regions, already provided an incentive that targeted the biotechnology sector specifically.

- Biotech companies also have great difficulty obtaining the funding they need to embark upon the product development and marketing phase. These are high-risk activities that call for heavy outlays, a significant portion of which should ideally be in the form of investment from outside Québec, in order to enable the sharing of expertise and enhance ultimate marketability.

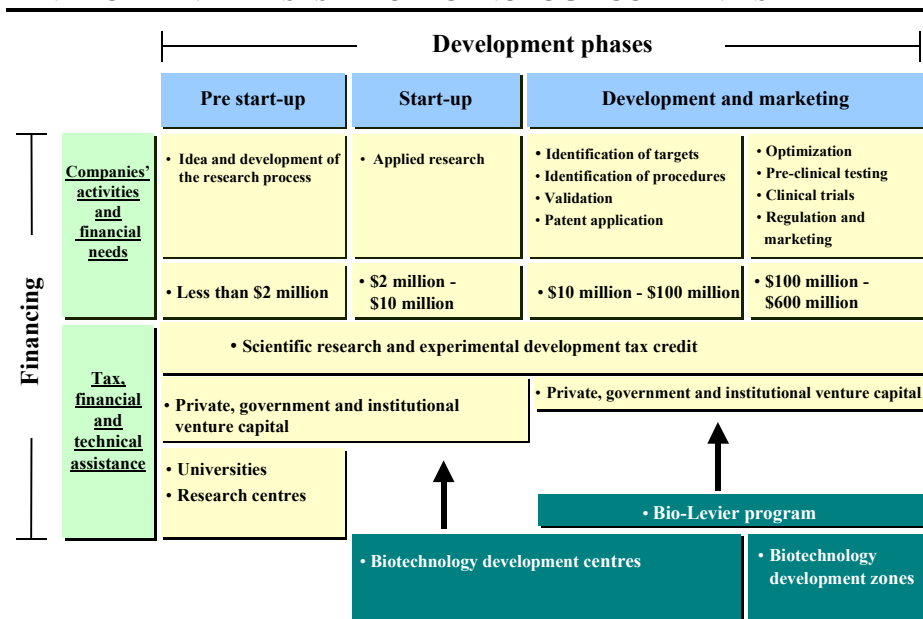
TARGETED MEASURES

The initiatives introduced by the government as part of the **Supplement to the 2002-2003 Budget** are for the express purpose of enhancing existing support measures, so as to meet the specific needs of biotechnology companies during the start-up and development and marketing phases.

These initiatives are twofold:

- The government is introducing the Bio-Levier capitalization loan program. The goal of this program, which has a leverage effect, is to provide biotech companies preparing to embark upon the product development and marketing phase with additional financial support.
- In order to stimulate the creation and development of businesses in the biotechnology sector, the government is also setting up two new biotechnology centres, one in Sherbrooke and the other in Saint-Hyacinthe, and is introducing a new refundable tax credit intended to promote the development of nutraceuticals and functional foods by businesses in the Québec City region.

DEVELOPMENT PHASES – BIOTECHNOLOGY COMPANIES



Source: Ministère des Finances du Québec.

The Bio-Levier capitalization loan program

To make it easier for growing young biotech companies to obtain financing, the government is introducing the **Bio-Levier capitalization loan program**. The program, which has a leverage effect, matches the contribution of outside investors with a loan. Thus, for a given investment in the form of equity capital, comprising a minimum of 20% funding from outside Québec, the government will grant equivalent assistance in the form of a loan.

As of the 2002-2003 fiscal year, the new program will receive an envelope of \$100 million. This method of financing will enable companies to prompt more investors to commit financially to this sector of activity – the leverage effect should result in investments of \$200 million in the biotechnology sector.

This program is intended for growing companies that have progressed beyond the start-up phase. A minimum investment of \$7 million in equity capital per project is required, and the maximum loan is \$20 million per company. Eligible companies will have ten years to repay the loan.

BIO-LEVIER CAPITALIZATION LOAN PROGRAM: PARAMETERS OF THE MEASURE

Maximum leverage effect	Equity: 50% Loan: 50%
Eligible sector	Biotechnology
Investors' contribution	Minimum of \$7 million in equity capital
Maximum loan	\$20 million
Development phase of eligible companies	Growth
Repayment deadline	10 years
Program envelope	\$100 million
Potential investments	\$200 million

The Sherbrooke and Saint-Hyacinthe biotechnology development centres

The government is extending the concept of the Centre de développement des biotechnologies, already established in Laval, to those regions of Québec that boast strategic assets in this area – namely, the appropriate health-care, university training and scientific research infrastructures in the biotechnology sector – as well as a sufficient number of business start-ups and growing companies.

The government hereby announces the creation of two **biotechnology development centres**, one in **Sherbrooke** and the other in **Saint-Hyacinthe**.

- In Sherbrooke, biotech companies will specialize in the genomics, proteomics and biopharmaceutical sectors.
- In Saint-Hyacinthe, research will be conducted mainly in the agri-food, agro-environmental and veterinary medicine sectors.

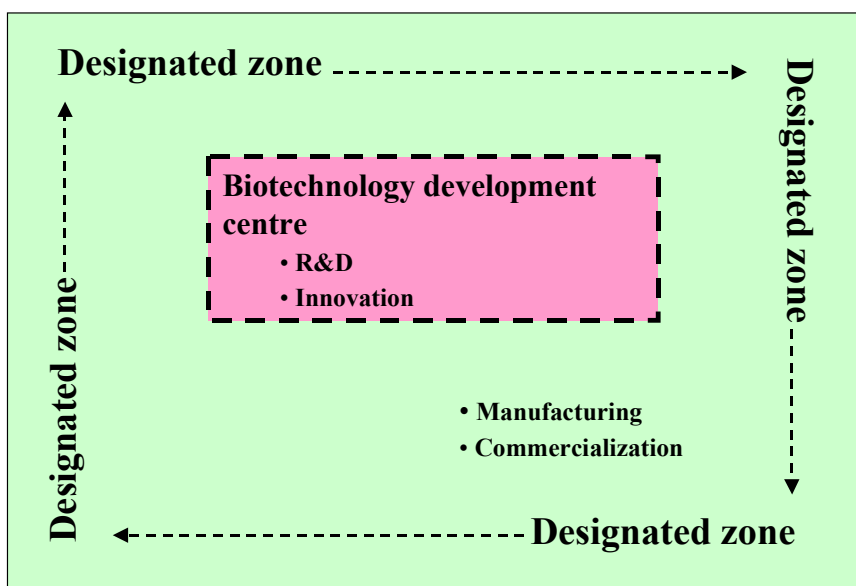
Other such centres, for example in Montréal or Québec City, could benefit from a similar measure, provided they assemble a critical mass of start-up companies working with research centres, universities and other comparable infrastructures.

Companies that set up business and develop innovative projects in these biotechnology development centres will be eligible for the following tax benefits:

- A refundable tax credit of 40% on the wages paid to eligible employees, up to a maximum of \$15 000 for a period not exceeding ten years;
- A tax holiday with respect to income tax, the tax on capital and the employer contribution to the Health Services Fund (HSF), valid for a period of five years;
- A refundable tax credit of 40% on the costs of acquiring or leasing eligible specialized equipment, valid for the first three years;
- A refundable tax credit of 40% on the costs of using eligible specialized facilities on a periodic basis, valid for the first five years.

Furthermore, as a complement to these two biotechnology development centres, the government is introducing tax assistance to foster the development of manufacturing and commercialization activities in the biotechnology sector. This means that companies which set up business in designated zones⁶ will be eligible for a refundable tax credit of 40% with respect to the increase in payroll attributable to employees who carry out manufacturing and commercialization activities in the biotechnology sector, for a period of three years.

ILLUSTRATION



Between now and 2004-2005, these fiscal measures will represent an investment of \$9.5 million.

⁶ In Sherbrooke, the designated site will be established in the vicinity of the biotechnology development centre. In Saint-Hyacinthe, a site will be designated at a later date.

Introduction of a refundable tax credit for nutraceuticals and functional foods

The Québec City region is recognized as being one of Canada's main centres for the development of nutraceuticals and functional foods.

- A functional food is similar to conventional foods, but has proven health benefits and reduces the risk of chronic illnesses, in addition to its basic nutritional functions.
- A nutraceutical is a food-based product sold as pills or powders, or in other medicinal forms, that has proven health benefits or provides protection against chronic illnesses.

In order to consolidate the position of the Québec City region and promote the growth of businesses active in this specific niche of the biotechnology sector, the Québec government is introducing a refundable tax credit designed to stimulate the development of nutraceuticals and functional foods.

This tax assistance will be available to businesses established in the Québec City census metropolitan area. It will be used, among other things, to help support existing businesses and create new ones.

Companies established in this area will receive a refundable tax credit of 40% with respect to the increase in payroll attributable to eligible employees, valid for a period of three years.

Summary of fiscal measures

SUMMARY OF FISCAL MEASURES TO SUPPORT BIOTECHNOLOGY¹

	Biotechnology development centre	Biotechnology development zone	Nutraceuticals
Tax assistance	40% tax credit on wages paid (maximum of \$15 000/job/year), maximum of ten years End of measure: December 31, 2013 40% tax credit on the cost of specialized equipment, for three years 40% tax credit on the cost of using specialized facilities on a short-term basis, for five years Tax holiday of five years (income tax, tax on capital, HSF contributions) Tax holiday of five years for foreign specialists	40% tax credit on payroll increases, for three years End of measure: December 31, 2006 Tax holiday of five years for foreign specialists	40% tax credit on payroll increases, for three years End of measure: December 31, 2006 Tax holiday of five years for foreign specialists
Eligible sectors	Biotechnology (innovative projects)	Biotechnology	Nutraceuticals and functional foods with proven health benefits
Eligible activities	Innovation process (ranging from R&D to the production of goods and services)	Manufacturing and commercialization	Manufacturing and commercialization

¹ This summary does not include tax benefits available to businesses under the Carrefours de la nouvelle économie measure.

Source: Ministère des Finances du Québec.