

## Quebec, North America's life science hub

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special report

## Quebec, North America's life science hub

Quebec, Canada's largest province by area, ranks among the 10 most important health sciences industrial pools in North America. The low manufacturing and R&D expenses as compared to any other North American and European city increase investors' attraction towards Quebec. Located in the proximity of the US and similarity with its regulatory system also make Quebec a favorable destination for leading life science firms.

The multimedia and aerospace industries in Quebec are world renowned, however, its life science industry was little known to the outside world despite having world-class facilities. Things have changed in the last few years, and now the province's government is poised to market its vibrant life science industry to the outside world. The tax credits and incentives offered by the government, and less formalities to start a new business turned Quebec as a hotbed for international life science players.

As part of its plan to market Quebec's expertise in science and technology to other parts of the world especially in the emerging markets, the province's Ministry of Economic Development, Innovation and Export Trade is planning to send a trade delegation to India in the first week of February 2010. The mission will be led by the Premier of Quebec, Jean Charest. For bilateral collaboration with India in the field of science and technology and to attract Indian investors to Quebec, the delegates will visit three Indian cities-Delhi, Mumbai and Bangalore. The Premier will also be on hand to inaugurate the Quebec Delegation in Mumbai as well as Invest Quebec's office in Mumbai. These facilities will help promote trade and

investment.

The life science industry in Quebec Province revolves around two nucleus or bio-clusters, Montreal and Quebec City.

### **Montreal bio-cluster**

Montreal ranks first in Canada in both the number of research centers and total funding for university research. Montreal is home to more than 620 life science companies, including 80 subsidiaries of international firms, and 150 research organizations.

### **Montreal InVivo**

Montreal InVivo is a non-profit economic development organization based in Montreal. It aims to ensure the sustainable development, durability and international reputation of the Life Sciences and Health Technologies (LSHT) cluster of Montreal. Michelle Savoie, CEO of Montreal InVivo, says, "Quebec has a very good talent pool and its world class universities and research institutes are training the students to meet the needs of the industry. The Quebec government is always been a good supporter of innovation. Quebec is also emerging as a place for generic players and CROs."

### **Invest Quebec: promoters of economy**

Invest Quebec is a public agency with a highly successful record in promoting domestic investment, attracting foreign investment and supporting businesses at every stage of their growth. Invest Quebec manages attractive tax incentives and, as a financial institution for business, it offers a full-range of financial options and tools. The organization creates customized packages to meet the specific needs of each business, and can help with anything from site selection to finding local partners.

Invest Quebec assists the companies looking for expansion by providing consulting services as well as financing assistance. They have recently expanded its Asian presence by opening offices in Beijing (China), and Tokyo (Japan), as well as the new office in Mumbai (India).

### **Breeding ground for innovation**

Quebec is also a breeding ground for genomic innovation. Genome Quebec, situated in Montreal, reinforces the competitiveness of the genomics innovation system in Quebec through partnerships with key players in life sciences on national and international levels. This year Genome Quebec has awarded over \$26 million (about Rs 120 crore) to scientists in a federal genomics research competition on bio-products.

The Biotech City in Laval just a few miles away from Montreal city provides an excellent atmosphere for companies into life science research and development. The Biotech City is a research and business environment that brings over 80 life science companies together.

### **Quebec City bio-cluster**

Founded in 1608, Quebec City is one of the oldest European settlements in North America and the capital of Quebec Province. The region features a unique blend of old and new world influences. In Quebec City, business opportunities are in abundance. Further, the city is well-known for its highly qualified local talent and a steady economic growth provides high returns on investments. According to KPMG report, operating costs for biomedical R&D and clinical trials are 10-15 percent lower in Quebec City region than in the US.

### **Effective business support services**

The Quebec City-based economic development agency, POLE Quebec Chaudières-Appalaches, provides effective business support services. In life sciences, it has identified pharmaceutical industry, biotechnology, medical equipment manufacturing, food processing and nutraceuticals as the niche areas to optimize economic development. POLE stimulates wealth creation, encourages entrepreneurship and develops strategic approaches in the areas of innovation, investment, marketing and workforce training.

Another Quebec City-based agency called, the CQVB (Centre Québécois de Valorisation des Biotechnologies) is a liaison and transfer center, which aims to stimulate and support technology transfer and innovation within small to medium-sized life science companies in Quebec. CQVB's sectors of interventions are: human health, animal health, industrial bio-products, and marine biotechnology.

## Hub of international researchers

The historic Laval University is situated in Quebec City takes charge of the talent supply to the industry. Over the last five years the university is ranked among Canada's 10 leading research universities.

The Laval University's Infectious Disease Research Center (IDRC) is mostly focused on host-pathogen interactions with the goal of developing new strategies and tools to better prevent, diagnose, and treat infectious diseases for best management of patients. The center was founded by acclaimed scientist Prof Michel Bergeron. In 2000, Prof Bergeron and his team unveiled a procedure that improves on Pasteur's microbial detection method, developed 125 years ago. The procedure can identify microbial DNA in less than an hour, compared to 48 hours using micro-biological culture-based methods. "This represents a major scientific breakthrough since doctors can rarely afford to wait that long before deciding on a course of treatment," says Prof Bergeron.

The world-class research is happening in the university's cellular neurobiology unit, Robert Giffard Research Center (CRULRG) with total staffs of 350. Dr Yves De Konink, director of CRULRG is a pioneer and world leader in the fight against chronic pain. According to him, due to the unique expertise of Quebec created by its excellent research institutes, they were able to get a number of international researchers. "The environment we have created is very competitive when it comes to attracting the finest research talent," says Dr De Konink.

Dr Fernand Labrie is another acclaimed scientist from Quebec City, who founded world's first molecular endocrinology lab in the city. Dr Labrie and his team at Laval University Hospital Center (CHUL), one of Canada's top research facilities with more than 1,600 people, have identified a drug-based treatment that has significantly reduced prostate cancer mortality rate. These drugs, known as LHRH agonists, are used in medical castration and are marketed in Canada by Astra Zeneca and Abbott. Dr Labrie's team is working on a similar project for treating breast cancer. "Since prostate and breast cancer are both hormone-related, we can apply what we have learned about cancer in men to help women," says Dr Labrie.

## Fact File

1. The Quebec Province has nine universities and four medical faculties. These universities have over 13,500 full-time equivalent researchers in 18 institutions
2. Close to 150 products are currently in development in Quebec
3. All the 10 largest pharmaceutical companies in the world have established operations in Quebec
4. Quebec is home to more than 30 experienced contract research companies, employing close to 5,000 people
5. Nearly half of the Canadian life sciences industries are concentrated in the Montreal region, that is more than 400 companies
6. Montreal ranks eighth in North America for pharmaceutical jobs, with a pool of 32,000 in the biopharmaceutical industry and over 13,000 researchers in the public biomedical research centers
7. The costs of doing research or manufacturing in Quebec are lower than in Europe and the US.
8. Quebec has one of the lowest corporate income tax rates in North America: 30.9 percent to be continuously reduced to 26.9 percent in 2012

## Quebec biopharmaceutical strategy

The Quebec's Ministry of Economic Development announced its biopharmaceutical strategy during the 16th edition of BioContact 2009 held in Quebec City between October 7-8, 2009. The strategy provides development support for biotech and biopharmaceutical firms, and the ministry will provide \$122.77 million (about Rs 537.30 crore) to implement this.

### Highlights of the strategy:

1. Step up development and spin-offs from research
2. Support the development of biotechnology firms and big biopharma firms
3. Maintain a labor force able to meet the industry's needs
4. Promote the world over Quebec's image as a biopharmaceutical hub

## Advantage Quebec

The various government agencies in Quebec offer attractive incentives and tax credits to the companies establishing their shop in the Province. Listed are a few of such benefits offered by the province.

### Refundable tax credit

Companies involved in biotechnology innovation and based in any of the designated Biotechnology Development Centers (CDBs) across the province (Laval, Sherbrooke, Saint-Hyacinthe or Levis) may be eligible for a refundable tax credit on: 30 percent of wages paid, cost of acquiring or renting eligible goods, and eligible rental fees for specialized facilities.

### **Strategic support for investment program**

If any company is planning an investment or seeking to develop a new product, the economic development agency, Invest Quebec can provide various types of loans, a loan guarantee or a non-repayable contribution. It offers a loan guarantee which may cover up to 70 percent of the net loss or a loan ranging from \$250,000 (about Rs 1.15 crore) to \$15 million (about Rs 69.50 crore) to improve the working capital or finance the purchase of equipment.

### **Feasibility study of an investment project**

Invest Quebec provides financial contribution to companies that want to carry out an investment project in Quebec. The program can cover up to 40 percent of the fees of experts to carry out feasibility studies to a maximum grant of CDN\$100,000 (about Rs 43.78 lakh). Eligible activity sectors are manufacturing, recycling, business services, industrial research and development, and scientific services.

### **Investment tax credit**

A business that acquires new manufacturing and processing equipment before January 1, 2016 can receive this tax credit, which can vary between five percent and 40 percent depending on the region.

### **Tax holiday for foreign researchers**

Foreign researchers employed by a company in Canada that does R&D in Quebec Province benefit from a provincial tax holiday on their salary for five consecutive years. It is a declining tax holiday computed as follows: 100 percent of employment income the first two years, 75 percent the third year, 50 percent the fourth year and 25 percent the fifth year. This measure also applies to other foreign experts such as managers working in innovative fields.

### **Innovation brings Rol**

The availability of cutting-edge technologies and world renowned researchers make Quebec City, a breeding ground of innovation. These factors make the pipeline of the companies affluent and bring returns for their investment. Other than pharma and biotechnology research, Quebec City is also home for a bunch of bio-photonics companies and research institutes. Bio-photonics is a new area where biology and photonics science combine to make sophisticated equipments for the medical device industry. The National Optics Institute based in Quebec City is a forerunner in this field.

### **Networking opportunities**

Every year, Quebec City hosts a wide range of networking events and activities geared towards international companies and researchers, including BIO Contact, Canada's largest life sciences convention; the Health Industry Forum and the Quebec City Conference attract more than 350 international venture capital professionals. The 17th edition of BioContact will be held in Quebec City from October 6-7, 2010.

The business atmosphere in the province is safe, encouraging and favorable for the big pharma/biotech and start-ups as well. Most important fact is that the companies in the province do not compete with themselves, they help each other to become more innovative and productive, and this formulates them capable to take-up the challenges from the outside world.

*Ajeesh Anand in Montreal and Quebec City, Canada*

*(The author was in Canada at the invitation of Quebec Ministry of Economic Development and Invest Quebec)*