



## Microelectronics

*Québec : A Dynamic and Profitable  
Business Environment*

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## HOME

### Made in Québec!

In recent years, the outsourcing services industry for the design and manufacturing of electronic systems and components has experienced steady growth. Approximately one hundred companies specialize in designing circuits, manufacturing and assembling electronic components, and producing design software, chemicals and test and production equipment.

Although the microelectronics industry is characterized by a large number of small companies, there are also several major players in Québec, including IBM, Matrox and Teledyne-DALSA. Over half of the jobs in this industry (55%) are provided by 10 companies, about 10% of the companies in the sector.

### A Thriving Industrial Pole

In 2009, Université de Sherbrooke announced that it was joining forces with several industry companies, including IBM and DALSA Semiconductor, to build a global centre of excellence for advanced research in microelectromechanical systems and assembling silicon chips. The new centre of innovation, which should open in the fall of 2011, will bring together some 250 university and private-sector researchers and help establish Québec as home to a major industrial pole that is also a strategic part of North America's northeastern microelectronics corridor.

- Qualified, plentiful labour;
- The largest pool of engineers in Canada;
- A major network of universities and research centres;
- Better operating costs than in the United States and G7 countries;
- Tax measures to promote research & development.

#### Homegrown Québec Technology on the Red Planet

The CCD imaging sensors installed on NASA's *Spirit* and *Opportunity* Mars exploration rovers were manufactured in Bromont, Québec, by the firm Teledyne-DALSA.

*“Investissement Québec's support enabled us to make our consolidation project profitable more quickly. That's what convinced our parent company to make the Bromont plant IBM's sole semiconductor assembly and test centre, in 2006. The assistance granted to foreign companies established in Québec sends a clear signal: the government wants to ensure the development of subsidiaries.” — Raymond Leduc, Managing Director, IBM Canada (Bromont plant), 2009.*

**Your company is growth-minded. Expand your horizons in Québec.**

*Last update: July 2011*

## SECTOR PROFILE

Québec has more than 100 companies specializing in microelectronics and employing a combined total of about 8,200 people. These companies are active in a variety of fields such as:

- semiconductors
- specialized circuits and systems for design, inspection and manufacturing
- assembly

Company	Sector	Jobs	Location
IBM	Encapsulation	Over 2,500	Bromont
CMC Electronics	Hybrid integrated circuits (avionics)	800	Montréal
Matrox	Graphics processors	500	Montréal
Teledyne-DALSA	Silicon/MEMS foundry	390	Bromont
Olympus NDT	Inspection systems	350	Québec
Defense Ultra Electronics	Military communication systems	230	Montréal
Gecko Alliance Group	Spa controls and systems	225	Québec
PerkinElmer Optoelectronics	Optoelectronic components	224	Montréal
Varitron	Component assembly	190	Longueuil

Averna	Test equipment	175	Montréal
C-MAC Microtechnology	Hybrid circuits	150	Sherbrooke
Gentec	Component assembly	120	Québec

Source: ICRIQ ([www.icriq.com](http://www.icriq.com)).

## Semiconductors

In 2008, the active components industry in Québec had 13 companies employing a total of 4,575 people. A large proportion of their operations is high-value-added and deals with new product development for an international clientele. These companies therefore generate considerable employment in R&D. This industry accounts for over half the employment in microelectronics in Québec. The main companies are IBM and Teledyne-DALSA.

### IBM

IBM, which enjoys an enviable international reputation, invests \$10M annually in its Bromont plant to maintain its leadership in the assembly of cutting-edge microelectronic components. It operates the only chip encapsulation plant in North America, and develops technologies both for this plant and for its major clients.

### Teledyne-DALSA

Teledyne-DALSA is the world's leading independent MEMS foundry for the manufacture of

- integrated circuits in the form of silicon wafers intended primarily for combined analog/digital applications
- imaging sensors
- microelectromechanical systems (MEMS).

This silicon foundry is the largest in Canada and the fourth largest independent one in the world. Teledyne-Dalsa is also a leading manufacturer of CCD cameras (charge-coupled devices).

## Specialized Circuits and Systems for Design, Inspection and Manufacture

In 2008, Québec had 730 jobs in 35 companies and research institutes specializing in the design of integrated circuits, electronic systems, and processes and devices for manufacturing and inspection. Most of these organizations offer turn-key services in the

development of microcircuits and electronics. The products are mostly targeted at market niches such as:

- medical
- industrial automation
- security

Manufacturing and inspection processes and systems play an important role in microelectronics, since they generally determine performance and are responsible for the technological strides made in this sector in the past few years.

For example, **Matrox** is a world leader in video processor design.

### Electronics Assembly and Passive Components

This sector is made up of 56 companies providing employment to 2,900 people. It includes:

- manufacture of passive circuits for niche applications such as custom cables and high-value-added components for specialized markets
- electronic component assembly services

Most high-volume production of electronics is done in Asia. However, the production of high-value-added systems for the defense, medical and aerospace industries takes place in North America and Europe.

For example, **C-MAC**, located in Sherbrooke, is active in the international sale of dedicated hybrid circuits, mainly for the energy and automotive markets.

## INDUSTRY-LEADING COMPANIES

### Major Microelectronics Companies

**Averna** is a test engineering company that uses software and hardware solutions to help clients in the global electronics, telecommunications, automotive, aerospace and defence sectors bring electronic products to market more quickly and enhance quality. Averna employs 175 people.

**Cable Axion-Digitel** designs, manufactures and markets high-technology communication and entertainment systems for mass transit. The company, which employs 60 people, is the only manufacturer of integrated audio and visual systems.

**C-MAC Microcircuits ULC** specializes in the manufacture of thick-film hybrid circuits and the assembly of printed circuits. The company employs 150 people.

**CMC Electronics** is a world leader in the design, manufacture and sale of high-technology electronic products for the aviation, defence and communication markets. The company employs more than 1,200 people worldwide, including 800 in Montréal.

**Digico Fabrication Électronique** provides complete electronic card, cable and harness assembly services as well as encapsulation, functional testing, engineering, design development and logistics services. The company employs more than 110.

**Gecko Alliance**, specialized in the design and manufacture of electronic controls for spas and baths, employs 225 people in Québec City.

**Gentec** designs and manufactures reliable and robust custom products and solutions in the high-technology, power and energy management sectors. Gentec employs 120 people.

**GGI International** specializes in the manufacture of membrane keypads and graphic overlays for the electronics industry. The company has 170 employees.

**IBM Canada** employs more than 2,500 people at its Bromont plant. The plant, equipped with IBM's largest semiconductor encapsulation and test facility worldwide, is one of the main exporters of technology products in Canada.

**Kongsberg Automotive (KA)**, which had revenues of 865 million euros in 2010, operates close to 35 facilities in 20 countries and employs about 10,000 people. The Shawinigan plant specializes in developing electronic solutions to replace components that were once strictly mechanical. The company has more than 100 employees.

**M2S Electronics** offers value-added electronic contract services as well as R&D, integrated

product and electronic card assembly solutions. The company employs 100 people.

**Matrox (Electronics system)** employs 500 people in its microelectronics division. Matrox is known for its innovative and cost-effective imaging solutions for OEMs and integrators specializing in machine vision, image analysis, medical imaging and video surveillance.

**MDA Corporation** is the world leader in space robotics and a major solution provider for satellite missions. MDA built the famous Canadarm and Canadarm2 for the International Space Station and is currently developing the next generation of radar satellites, RADARSAT-2.

**MPB Technologies** specializes in the development and manufacture of products for the telecommunications, aerospace and photonics sectors. MPB has 150 employees.

**Octasic** is a global provider of media and wireless modem processing silicon and software solutions for the converged carrier, enterprise and end-point communication equipment markets. About 85 people work for the company.

**Olympus NDT Canada**, with 350 employees, is a world leader in the manufacture of innovative non-destructive testing apparatus used for industrial and research applications in aerospace, power generation, the automotive industry and the manufacture of consumer goods.

**PerkinElmer**, with a workforce of 224, manufactures leading-edge semiconductor optoelectronic components and subsystems that are used for numerous applications.

**Siemens** is one of the largest and most diversified companies in the world of electronics and electrical engineering, operating in the industry, energy and healthcare sectors. Near 650 persons work at Dorval.

**Task Micro-Electronics**, 86 employees, specializes in the design, development and manufacture of optoelectronic sensors, hybrid circuits, microcircuit wire-bonding on hybrid circuits, as well as surface-mount and mixed-technology cards.

**Teledyne-DALSA**, which employs near 400 people, provides high-volume specialized wafer foundry services with capabilities in MEMS, CCD (image sensors), high voltage CMOS (< 700 V) and CMOS (0.5 µm to 9 µm).

**Terminal & Cable TC** manufactures a vast array of wiring (electric harnesses) and battery cables for the automotive and military industries. Terminal & Cable TC has 230 employees.

**Varitron Technologies** provides a full array of electronic manufacturing services. Depending on client needs, the company drafts engineering documents and sees to production. Near 200 employees work for the company.

Wavesat is a global leader in mobile broadband, providing advanced semiconductor solutions to the world's leading carrier and mobile device manufacturers to deploy future-proof broadband services and products. 60 persons work in Dorval.

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## RESEARCH & DEVELOPMENT

Montréal has the highest number of engineers in Canada, as well as a number of public and private R&D facilities in the new technologies sector, including:

### MiQro Innovation Collaborative Centre (C2MI)

The C2MI is an original partnership between Sherbrooke University, DALSA Semiconductor, IBM Bromont and the TechnoParcBromont. Its geographic location is between Montréal and Sherbrooke, at the tip of the rapidly blooming northeast microelectronics cluster.

MiQro Innovation Centre will be an international pioneer in packaging the next generation of microchips. Its role is downstream of the production of 45-nm and 32-nm chips and will be to develop new technologies for cutting out the microchips, linking them electronically to innovative packages managing heat dissipation, testing them and preparing them for shipment. Undertaking R&D projects;

The centre's leading principles in a few words:

- Active recruitment of future industrial and academic partners;
- Unique opportunity for connecting university and industry researchers.
- Integrated research approach;
- From fundamental research to commercialization;
- State-of-the-art infrastructure to attract, train and retain highly qualified personnel.

### C2MI and Intellectual Property

The Centre will respect contributing organizations norms. IP development shall be made with a common objective of canadian commercialization. Three main rules have been established:

- Projects must be agreed upon before start;
- Researchers and students will be able to present their thesis under the usual time frame;
- When a project's scope falls outside of the market segments of the parties involved, IP rights will belong to those who are interested in commercialization.

## Research & Development University Research Group and Laboratories

Concordia University's **Applied Electromagnetic Group** carries out research and teaching activities related to electromagnetics. Its areas of study include antenna design, computational electromagnetics, electromagnetics compatibility, electromagnetics measurement, indoor radio propagation, scattering and diffraction, and radar cross analysis. The Group conducts collaborative research and educational programs with local universities and industry, as well as national and international laboratories.

Members of Concordia's **CENPARMI** (Centre for Pattern Recognition and Machine Intelligence), in the Faculty of Engineering and Computer Science, conduct advanced research and development on multidisciplinary projects in the following areas:

- Handwriting recognition and signature verification
- Image analysis and document processing
- Combination of different types of features and classification techniques
- Application of multiple expert systems and neural networks
- Natural language processing
- Parallel algorithms and VLSI architectures

The **VLSI research group** at Concordia researches very large-scale integrated circuits, including the design and implementation of analog-mixed signal circuits, integrated sensors, and VLSI systems for signal processing, communications, robotics and other applications

**LaCIME** (Laboratoire de communication et d'intégration de la microélectronique (Communication and microelectronic integration laboratory) at the École de technologie supérieure (ÉTS) focuses on the research area where communications and microelectronics intersect.

ÉTS's **LIVIA** (Laboratoire d'imagerie, de vision et d'intelligence artificielle (Imaging, vision and artificial intelligence laboratory) investigates on the visual perception of 2D and 3D images, with a focus on image analysis and interpretation. The lab conducts studies on modelling, methodologies and applications, concentrating on four main research areas:

- Artificial vision;
- Automatic document recognition;
- Imaging (medical, aerial, etc);
- Evolutionary algorithms to optimize complex systems.

McGill University's **Centre for Intelligent Machines** is a research group that facilitates and promotes research on intelligent systems.

The **Microelectronics And Computer Systems (MACS) Laboratory** ([www.macs.ece.mcgill.ca](http://www.macs.ece.mcgill.ca)) at McGill studies the following research topics:

- Analog and digital systems
- Asynchronous circuits
- Logic synthesis
- Radio-frequency circuits
- VLSI models
- Signal integrity analysis
- Circuit simulation and modelling

The **NanoQAM research centre** comprises four laboratories at the Université du Québec à Montréal (UQAM), each of which possesses a wide range of state-of-the-art instruments for synthesizing and characterizing nanomaterials and nanodevices.

The **GR2M (Microelectronics and Microsystems Research Group)** at École Polytechnique de Montréal is a group of about 100 researchers whose research focuses mainly on the design of high-performance and very large-scale integrated circuits (VLSI). The group also tests these components.

École Polytechnique's **GRSTB (Biomedical Science and Technology Research Group)** is an interdisciplinary group of researchers working on biomedical engineering at the Université de Montréal and its associated hospital research centres.

Université de Sherbrooke's **CRN2 (Research Centre in Nanofabrication and Nanocharacterization)** offers numerous services related to these fields.

Université de Sherbrooke's **Microengineering Laboratory for MEMS** researches microfluidic, energetic, and thermal microfabricated systems, known as *Power MEMS*.

Université de Sherbrooke's **CERPEMA (Research centre on the electronic properties of advanced materials)** covers a broad range of subjects in solid state physics, all the way from formal theoretical studies based on field theory approaches to concrete applications (e.g. optoelectronic devices).

UQAM's **Partnerships & Innovation Support Service** was created in October 2010 to transmit knowledge and know-how developed at UQAM and promote successful partnerships with industry.

## Research & Development High-tech Expertise Network

Québec's industrial structure has the energy and skill to remain ahead of the curve when it comes to major world economic trends. Montréal is the Canadian leader in the aerospace, biotechnology and IT sectors and has major business clusters in these areas. It also possesses an educated, multidisciplinary labour force.

The PROMPT-Québec research program in microelectronics, photonics and telecommunications promotes the development of large-scale research projects to support industries in these sectors.

Universities and industries have partnered in the PROMPT program so they can better explore these leading-edge technologies. Academic researchers will work with companies in information and communications technology.

- The university partners include Université de Sherbrooke, McGill University, École Polytechnique de Montréal, École de technologie supérieure (ÉTS) and Institut national de la recherche scientifique (Energy, materials and telecommunications).
- Ericsson, Fonds de Solidarité FTQ, IBM, HyperChip, Miranda Technologies and Adtek Photomask are the original partners from industry.

The **Microsystems Strategic Alliance of Québec** (Regroupement stratégique en microélectronique du Québec (ReSMiQ) originated in the GRIAO research centre, founded in 1985 by four Montréal institutions: Concordia University, École Polytechnique de Montréal, McGill University and Université de Montréal.

The GRIAO centre focuses on leading-edge research in computer and system architecture; design of analog and mixed (analog/digital) circuits; systems testing and verification; as well as telecommunications, biomedical, RF circuits and signal processing applications.

In total, 23 researchers from nine university campuses are engaged in research projects at the Centre. The regular members come from laboratories at Concordia, the Polytechnique, ÉTS, McGill, Université de Montréal and Université du Québec à Montréal. Associate members from Université du Québec à Trois-Rivières, Université du Québec à Hull and Université de Sherbrooke are also involved. This is Québec's largest research centre in microelectronics and its applications, including computer architecture and VLSI.

**Québec's Microelectronics Innovation Centre** (Centre d'innovation en microélectronique du Québec-CIMEQ)

Non-profit CIMEQ is a college technology transfer centre with expertise in microelectronics. It designs and develops solutions to support Québec companies' innovation projects. Its services include:

- R&D projects;
- Liaison and transfer services;

- Needs assessment;
- Intermediation and networking services;
- Technical feasibility and commercial potential studies;
- Support for companies throughout their innovation projects.

NanoQuébec is a not-for-profit corporation organization whose principal funding partner is the MDEIE (Ministère du Développement économique, de l'Innovation et de l'Exportation); it plays a central role in structuring and planning Québec's nanotechnology industry. NanoQuébec serves as a hub that initiates and guides collaborative activities and provides financial support for technology transfer initiatives.

Through its three program types (infrastructure, research funding and mobilization), NanoQuébec seeks to:

- Consolidate nanotechnology research capabilities
- Accelerate nanotechnology development and industrial growth in Québec
- Mobilize all key players in nanotechnology development

## LABOUR

### Leading-Edge Education System

Historically, Québec has invested significantly in education. Moreover, it ranks second among OECD countries in terms of education spending with respect to GDP. This commitment has paid off: Québec's graduation levels rank above the average for OECD countries, particularly at the bachelor's and master's levels.

Québec boasts an education system that is able to supply and replenish a skilled and multidisciplinary labour force. Its seven universities (four French-language and three English-language) encompass 18 institutions with numerous programs in applied sciences, eight of which offer a complete range of engineering programs. Québec-based companies also have access to a variety of work-study programs in engineering and computer science offered by Québec universities.

In 2010, Québec universities awarded almost 3,500 diplomas in computer sciences, computer engineering, electrical engineering and other related programs, almost 70% of them in the Montréal area.

Enrolment and Degrees Awarded, Québec Universities						
Computer Science and Related Programs						
Programs	Undergraduate		Graduate		Total	
	Students	Graduates	Students	Graduates	Students	Graduates
<b>Computer Sciences</b>						
Computer Science	3,700	881	1,414	402	5,114	1,283
Computer Engineering	927	181	206	45	1,133	226
Electric Engineering	2,910	657	1,293	336	4,203	993
<b>Total</b>	<b>7,537</b>	<b>1,719</b>	<b>2,913</b>	<b>783</b>	<b>10,450</b>	<b>2,502</b>
<b>Related Programs</b>						
Mathematics	1,115	197	380	89	1,495	286
Aerospace Engineering	32	-	117	48	149	48
Civil Engineering	3,998	555	887	258	4,885	813
Mechanical Engineering	4,468	840	902	225	5,370	1,065
Industrial Engineering	1,375	276	548	146	1,923	422
Physic Engineering	299	41	79	9	378	50
Subtotal	11,287	1,909	2,913	775	14,200	2,684
<b>Total</b>	<b>18,824</b>	<b>3,628</b>	<b>5,826</b>	<b>1,558</b>	<b>24,650</b>	<b>5,186</b>

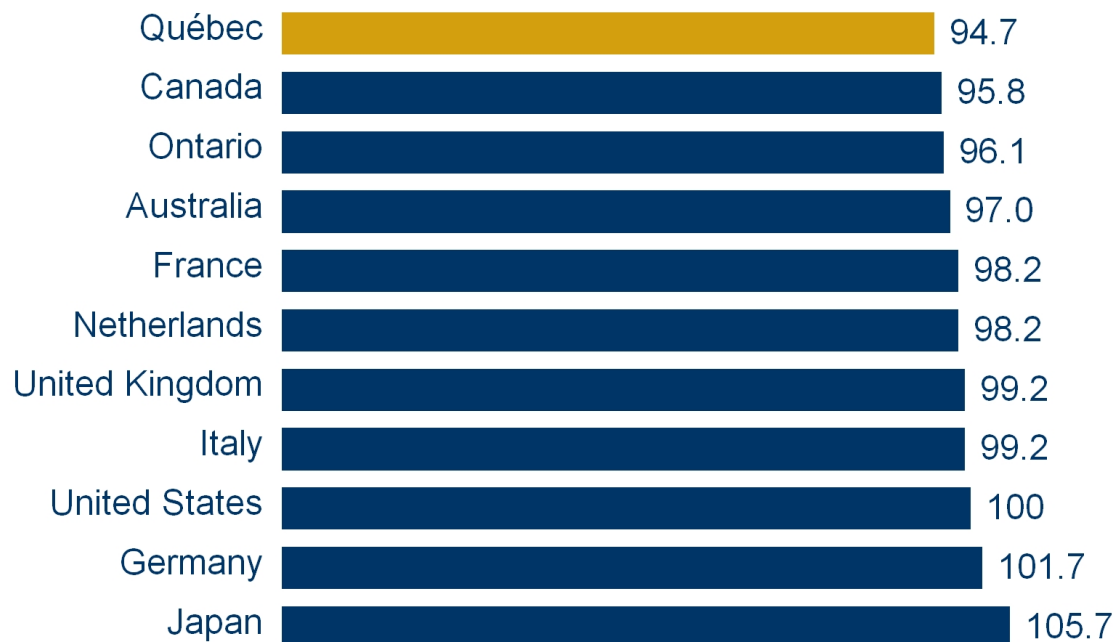
Source: Ministère de l'Éducation, Loisirs et Sports, 2010.

## OPERATING COSTS

According to the 2010 KPMG comparative study on international business location, the annual operating costs of an electronic components assembly company are 5.3% lower, on average, in Québec than in the United States.

### Comparison of Annual Operating Costs

Electronic Components Assembly (United States = 100)



Source: KPMG's Guide to International Business Location—2010 Edition.

## Operating Costs

### Labour

### Labour at a Competitive Price

According to a KPMG study (2010), labour costs are more competitive in Québec than in other industrialized countries.

Here is an example of cost differential and distribution in total pay for a worker in Québec and in the United States.

**Comparison of Average Salary  
in Québec and in the United States  
(US\$, Microelectronics Industry)**

	Average salary (KPMG)	Statutory benefits	Optional benefits	Sub-total: Social benefits (Statutory & optional)	Total pay
<b>Montréal (QC)</b>	<b>55,250</b>	<b>5,610</b>	<b>14,050</b>	<b>19,660</b>	<b>74,910</b>
Boston (MA)	59,390	5,130	23,280	28,410	87,800
Houston (TX)	55,590	5,560	20,510	26,070	81,660
New York (NY)	61,710	5,520	24,190	29,710	91,420
San Francisco (CA)	64,170	5,760	25,650	31,410	95,580

*Source:* KPMG's Guide to International Business Location-2010 Edition.

## FINANCIAL SOLUTIONS AND TAXATION

### Financial Solutions

Investissement Québec can assist you with your expansion plans, providing consulting services as well as financing assistance. In addition to being an economic development agency, we are also a financial institution. We have several financial solutions for you.

### Financing of refundable tax credits

Businesses can obtain a loan guarantee or a loan so they can enhance their liquidity.

### UNIQ Financing

We can provide you with a loan, a loan guarantee or quasi-equity financing to help you continue to grow in Québec. UNIQ Financing comprises two components, depending on the nature of your project:

Working Capital »

Capital Assets »

Another government program can assist companies in the microelectronics sector:

### 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 5% and 40% depending on the region.

## Financial Solutions and Taxation

### Measures to Stimulate R&D

Certain Québec tax measures enable companies to realize considerable savings on R&D costs. The real cost of a CDN\$100 R&D expenditure may be as low as CDN\$42.

#### Net Cost of R&D Expenditures Large Corporation or Foreign-controlled Corporation<sup>1</sup>

**Example 1:** A corporation incurs expenditures of \$100,000 on R&D; i.e., \$65,000 for the salary of a researcher, \$15,000 for subcontracting in Québec and \$20,000 for materials.

**Example 2:** A corporation incurs expenditures of \$100,000 on R&D; i.e., \$60,000 for the salary of a researcher, \$30,000 for materials and \$10,000 for equipment.

Expenses	Example 1 (\$)	Example 2 (\$)
A Salaries	65,000	60,000
B Subcontracting services	15,000	—
Materials	20,000	30,000
Equipment	—	10,000
<b>C Total R&amp;D expenditures</b>	<b>100,000</b>	<b>100,000</b>
Québec tax credit (A + B/2) X 17.5%	12,688	10,500
Federal tax credit		
Total expenditures (C)	100,000	100,000
Overhead (A X 65% <sup>2</sup> )	42,250	39,000
Less Québec credit	<u>(12,688)</u>	<u>(10,500)</u>
<b>D Expenditures eligible for credit</b>	<b>129,562</b>	<b>128,500</b>
E (D X 20%)	25,912	25,700
<b>F Total tax credits</b>	<b><u>38,600</u></b>	<b><u>36,200</u></b>
<b>Net cost for the corporation before income taxes (C-F)</b>	<b><u>61,400</u></b>	<b><u>63,800</u></b>
Tax savings (when profits are earned)		
Federal ((C - F) X 16.5%)	10,131	10,527
Québec ((C - E) X 11.9%)	<u>8,816</u>	<u>8,841</u>
<b>G Total tax savings</b>	<b>18,947</b>	<b>19,368</b>
<b>Net cost for the corporation (C-F-G)</b>	<b><u>42,453</u></b>	<b><u>44,432</u></b>

*1 Profitable corporation.*

*2 Proxy method used to calculate overhead. Under this method, overhead actually incurred is replaced by 65% of R&D salaries.*

*Source: Investissement Québec and Raymond Chabot Grant Thornton, April 2010. (Update: January 2011)*

## Financial Solutions and Taxation

### Corporate Tax Rates

#### Among the Lowest Tax Rates in North America

In Québec, the corporate tax rate of 28.40% is one of the lowest in North America. Québec's tax system is also very competitive regarding job creation and capital investment.

#### Canada and Québec Corporate Income Tax Rates Combined

	2011	2012
Canada general corporate tax rate for corporations	16.5%	15%
Québec tax rate for corporations	11.9%	11.9%
Total Canada + Québec corporate tax rates for corporations	28.4%	26.9%

#### Comparison of Income Tax Rates, 2011 Québec, Other Provinces and American States Manufacturing Companies

	Federal <sup>1</sup>	Province/ State	City <sup>2</sup>	TOTAL	Outside referenced city
Québec	16.50	11.90	-	28.40	-
California*	29.03	8.84	-	37.87	-
Connecticut*	29.23	7.50 <sup>3</sup>	-	36.73	-
Massachusetts*	28.96	8.25 <sup>4</sup>	-	37.54	-
New Hampshire	28.88	8.50	-	37.38	-
New York*	26.39	7.10 <sup>5</sup>	10.05 <sup>6</sup>	43.54	36.69
Pennsylvania	26.61	9.09	6.45 <sup>7</sup>	42.15	38.66
Texas*	31.50	1.00 <sup>8</sup>	-	32.50	-
Vermont	29.14	7.74	-	36.88	-

[1] In Canada, the federal tax rate is 11% for private Canadian-controlled companies with taxable income of less than CAN\$500,000. In certain provinces, reduced rates are also applicable to small businesses. The 2011 general rate of 16,50% (18% before that date) will pass to 15% as of 2012.

In the United States, the general tax rate of 35% varies depending on the corporation's taxable income. For U.S. manufacturing companies, a deduction of 9% of the profit related to production

activities or taxable income is available for 2011 and thereafter, which means an actual rate reduction of 3.15%. This deduction was 3% for 2005, 2006, 6% for 2007, 2008 and 2009 and 9% for tax year 2010 and later.

\* Certain States, such as Arkansas, California, Connecticut, District of Columbia, Georgia, Hawaii, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oregon, South Carolina, Tennessee, Texas, West Virginia and Wisconsin do not apply the federal deduction for manufacturing production. For the taxable years beginning on or after January 1, 2010, Kentucky and Virginia apply a 6% rate in regards to the deduction for manufacturing production.

City and state taxes are generally deductible from U.S. federal tax. The actual U.S. federal tax rate takes this deduction into account.

[2] Most of the rates provided for cities are from 2010, since some rates for 2011 were not available when this document was published.

[3] This rate is equal to the greater of 0.31% of the corporation's taxable capital and 7.5% of the taxable income allocated to the State. For tax years beginning after January 1, 2009 and before January 1, 2012, an additional 10% surcharge is also imposed on the income tax if the gross income is more than \$100,000,000 and if the corporation is not filing combined or unitary returns. The surcharge will increase to 20% for tax years beginning after January 1, 2012 and before January 1, 2014. We have not considered the surcharge into the rate provided above.

[4] For tax years beginning on or after January 1, 2011, the rate on corporate taxable income is 8.25% and will be reduced to 8% for the tax years beginning on or after January 2012. Moreover, a tax on corporate capital calculated at the rate of 0.26% must be added to the 8.25% tax.

[5] Companies are subject to a tax based on the highest of four amounts. The income tax rate is 7.1%.

[6] New York City. A surtax of 17%, applied to the state tax (7.1%) for the New York metropolitan area, has been added to the city's rate of 8.85%. The three rates may not apply to all companies.

[7] City of Philadelphia. A 0.1415% tax on gross income must be calculated in addition to the income tax.

*[8] The State imposes a Franchise Margin Tax at a rate of 1%. The "Margin" equals the lesser of the three following calculations: (1) Total revenues minus cost of good sold; (2) Total revenues minus compensation; and (3) 70% of total revenues. For tax years 2010 and 2011, if the revenue is less than \$1M the entity is exempt to the tax liability. The threshold will be reduced to \$600,000 after January 1st, 2012.*

*Source: Investissement Québec and Raymond Chabot Grant Thornton, April 2011.*

## Financial Solutions and Taxation

### Tax Holiday for Foreign Researchers

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

## CHOOSE INVESTISSEMENT QUÉBEC

Are you looking for the right place to grow your microelectronics company?

Call Investissement Québec.

We combine the advantages of a financial institution and an economic development agency, so we have what it takes to meet your needs.

**Our team of experts can help you :**

- Gain insight into the challenges and opportunities offered by Québec's microelectronics industry;
- Build productive, strategic alliances with local and international partners;
- Find a location that suits your needs;
- Benefit from attractive tax incentives;
- Find the right financing solutions including loans, loan guarantees and working capital.