2 KEY SECTORS OF QUÉBEC'S ICT INDUSTRY

ICT Industry profile

ICT is a real force for the Québec economy, ensuring 4.6% of its GDP (2011) and 121,000 jobs, 3.1% of the Province's employment. The sector invests nearly $ 1 billion annually in R&D or 20% of the Quebec's total annual investment with 30% of venture capital invested in ICT. 90% of the Québec ICT production is exported, hence the interest of the sector for a commercial and research mission.

Québec's support of Green ICT

Rich in renewable energy and internationally recognized for sustainable energy production, Québec is an important constituent in a global society facing strong economic and ecological challenges, addressing some pressing environmental challenges of our time, from energy management to climate change.

The Green ICT Equation initiative

Since 2003, an investment of the Government of Quebec totaling $22M in Prompt resulted in projects having a value of nearly $70M by 2013, within the institutional research setting. Prompt also manages the Equation private-public partnership, which is comprised of six green ICT projects totaling $70M from the Government of Québec and world-leading companies: Ericsson, Fujitsu, IBM, CGI, Miranda and Teledyne DALSA. Equation is already generating energy-efficient green ICT solutions that promise to reduce greenhouse gas emissions and energy consumption. These include cloud-based telecommunications networks, smart utility technologies and new environmentally friendly ICT processes and systems. These ICT-based innovations impact all sectors of society, and will play a central role of the development of sustainable 21st century.

The trade mission to the United Kingdom and Sweden is an initiative of the industrial partners of the Equation project who wish to further stimulate the economic impact of the major government investment in the Equation project and lay the groundwork for a broader mobilization with European players. For more information on specific individual organizations, please contact Joelle-Ann Blanchette of Prompt at jablanchette@promptinc.org.

Organization	Description
Charles Despins, Jacques Mc Neill, Joelle-Ann Blanchette **Prompt**	Prompt stimulates university-industry R&D partnerships of Québec's ICT industry.

QUÉBEC'S SMART GRID SECTOR

A Sector of Excellence with world-class expertise, education and R&D resources, Québec's Smart Grid industry is a dynamic ecosystem providing to major utilities worldwide including Hydro-Québec, its renowned R&D centre IREQ, leading universities (McGill, UQAM) and engineering schools (ETS, Concordia, etc.) active in R&D in Smart Cities and Smart Grids, industrial energy specialists and engineering firms, as well as multinational and innovative local firms. Electric mobility and smart grid are in the top priorities of Quebec Government with more than 516 M$ in investment planned for 2013-2017.

Participant in the mission active in the Smart Grid sector

Organization	Description
Sabin Boily, **École de technologie supérieure**[1]	Active in major business oriented projects such as the Canadian Centre of Innovation for Manufacturers and fruitful collaborations in the electrification of transportation. CCIM will play a transformative role by accelerating commercialization of advanced manufacturing capabilities to help create & sustain highly-productive, mid-sized firms
Soumaya Ben Letaifa **ESG UQAM**[1]	Research on successful management frameworks for implementing ICT initiatives and building sustainable smart cities. Best Governance practices & Innovation management
Jean-François Barsoum **IBM**[2]	Cities are gaining control over their development as core systems become instrumented & interconnected, enabling new levels of intelligence. Cities face challenges to their sustainability across all their core systems that need to be addressed holistically. Transport for London and the Swedish Road Authority rely on IBM to implement and run smarter transportation systems, which will be topic of presentations in both cities.
Stéphane Moisan Luis Fatela **CGI Group**[2]	World's 5th largest independent IT& business process services, CGI is International leader in Mobile Workforce Management Solutions used by the largest utility of the planet. CGI delivers smart metering data services based on its Instant Energy solution with over 30 years experience with the utilities sector, including building and running 10 of the 16 central energy market solutions in operation around the globe.
Serge Hamel **Trilliant**[2]	Worldwide company offering Utilities communications platforms that enables scalable, secure, meter-independent & multi-technology smart grid communications to help them address modern energy challenges and deliver reliable, clean, affordable energy.
Martial Vincent **Varitron**[2]	Electronics manufacturing services to the energy, telecommunications, aerospace, medical, military and automobile industries.
Laurent Poutrain **Vizimax**[2]	Interoperable solutions for Power Utilities, High Voltage Equipment Manufacturers and Industrial System Integrators to overcome today's and tomorrow's challenges.

1 : University and research organizations; 2 : Industry; 3: 451 Group study

QUÉBEC'S NEXT GENERATION TELECOM SECTOR

Québec is home a significant green next generation telecom innovation ecosystem ranging from ***microsystems and photonics components*** (e.g. IBM, Teledyne DALSA, C2MI 220M$ investments in advanced packaging and microsystems, INO - Canada's National Optics Institute, leading university R&D in microsystems at REsMIQ, radiofrequencies at CREER and in telecom at SYTACom, C2T3 and Optech), ***Telco Cloud*** (Ericsson $1.3B R&D center), ***Green Data Centers*** (11 players and 6th most inviting region in North America[3], OVH $137M & 350,000 servers and Colo-D $35M data centers), CGI, Fujitsu Innovation Center, etc.), ***Next Generation networks*** (Ericsson, Ciena, Verizon, GreenStar Network, etc.), *and* ***eApplications*** (eHealth, Smart Cities, eTransport, Smart Grid, High Performance Computing, Big Data Research with CGI, IBM, Calcul Québec, CRIM, etc.). Along with a strong scientific background in leading-edge green ICT and a pool of recognized skills available in the area, a Québec partnership or location offers energy-efficient storage and data processing centers adjacent to renewable energy sources, reliable and renewable energy at competitive prices, cooler weather and water for free cooling, cutting edge ICT infrastructure and rugged and extended fibre optics network, proximity to major centers, information protection laws similar to Europe and more inviting than the American Patriot Act.

Participant in the mission active in the Next Generation Telecom sector

Organization	Description
Véronique Doucet **City of Montréal**[1]	Montreal's Borough of Saint-Laurent is promoting the Eco-Campus Hubert Reeves, a sustainable development project dedicated to clean technologies and smart infrastructure.
Lydia Divry **TechnoMontréal**[1]	Montreal' s ICT Cluster, that unites and supports concerted actions, with the goal of accelerating and optimizing the competitiveness, growth and reach of the industry.
Christine Tremblay Michael Rabbat **SYTACom**[1]	Representing ETS and McGill, these researchers are involved in collaborative ICT communications systems research in Quebec with 50+ researchers at 10 Quebec universities which supports members' R&D activities.
Mohamed Cheriet **ETS**[1] **– GreenStar**[1]	R&D in the first telecommunication grade cloud-oriented computing fabric with GHG emissions footprint calculation and reduction capabilities.
Sofiène Affès **INRS**[1]	5G research by developing wireless access virtualization enabling strategies in the future context of 5th-generation wireless networks.
Brigitte Jaumard **Concordia**[1]	Researcher in large scale optimization, with a focus on applications in optical and wireless, access and core communication networks, including cloud computing. Other recent applications in green rail transportation and in artificial intelligence. She is a member of GERAD, CIRRELT and Calcul Quebec R&D groups.
Denis Lafrance **Optech**[1]	College center of technology transfer providing optic and photonic expertise and access to an impressive instrument park for various projects and applications.
Simon Boucher **C2T3**[1]	College center of technology transfer in telecom offering training and R&D support in digital signal processing and wireless transmission.
Pierre Boucher **Ericsson**[2]	Ericsson announced its plans to build a global ICT Centre in Vaudreuil-Dorion, Quebec. The new 40,000M^2 facility will house the company's complete portfolio enabling the R&D organization to develop and verify solutions, creating the foundation for the next generation technology and cloud-based services.
Daniel Legault **MetroOptic**[2]	Fibre optics, Internet access, hosting & security solutions in its global network interconnection centre in its Montreal 875STA.com-based 2,500M^2 carrier facility. Its high density fibre infrastructure permits communications to over 50,000M^2 of ecofriendly data centers for storage, processing and content distribution and allows international carriers to connect to local, regional & national partners, offering unsurpassed connectivity to the USA.
Mathieu Lemay **Inocybe Tech.**[2]	Niche expertise in Software Defined Data Centers, open access networks, SDN, cloud computing and virtualization technologies. In addition, It's data center management solutions enable ICT related GHG emissions monitoring.
Patrick David **Colo-D**[2]	New 10,000-m2 carrier-neutral colocation data centre located in Drummondville represents a $35 M investment in a new digital ecosystem.
Marc Girard **Civimetrix**[2]	Design and operate Open Access SDN networks of 1Gig to every home and business, with a 100% fibre backbone spanning Quebec and several USA States.
René Breyel **Claridion**[2]	Consulting firm of experts specializing in the monitoring of technology environments and the managing of data centers infrastructures (DCIM). Cisco ATP partners for Energy Efficiency Suite (Joulex) and Integrator of DCIM solutions from Schneider-APC, Geist, Siemens/Maya, Raritan, Panduit and is Uptime Institute certified – ATS – DC Operational Sustainability
Hossein Samimi **e-Tronics**[2]	Electronics assembly house specialize in the aviation, telecommunications, military, transport and automotive fields.

1 : University and research organizations; 2 : Industry; 3: 451 Group study