

Curriculum Vitae
Ray Sylvain Gignac

Tel: 450-654-1236
E-mail: sylvain.ray.gignac@gmail.com

Summary:

Passionate, energetic and proactive energy industry leader with a broad international experience in a wide range of functional areas ranging from the operations of utilities to business development of E&P. A former member of a number of industrial associations and regulatory agencies, including member representatives of the NPCC, ISO/RTO Council and CIGRE

Qualifications:

- Managerial and PL experiences of power assets, transmission networks, bulk power system, wholesale markets and reliability coordinators
- Business development in numerous industries and type of assets such as hydro, offshore wind farms and aluminium smelters
- M&A and divestiture
- Contractual negotiation such power purchase agreement, interconnection agreement and joint operating agreement
- Power trading in the following markets: ISONE, PJM, IESO and NYISO
- Clearinghouse/data center for power & ancillary services
- SCADA, Energy Management System and Inter-Control Center Communications Protocol
- System Control Centre
- Regulatory expertise - reliability standards NERC & NPCC
- Managing strategic partnerships with public and private stakeholders
- Influencing social debates, regulations, and policies on energy, environmental & social issues
- Living and working experience in Canada, UK, Norway, China, Australia, USA, Libya and Senegal

Employment History:

Ny Energi Consulting - Leader
2014

Taking experiences in the energy sector and applying techniques and methodology in other industries, including entertainment, IoT and more, for the development of business strategies, increasing P&L, overall organizational effectiveness programs and helping public sector, commercial and industrial customers make their businesses as sustainable as possible.

Accomplishments:

- Techstars & Statoil's accelerator fund (on going):
 - ◆ Provide scouting in Canada for new (start-ups) businesses and technologies improving safety, security, capital efficiency, operational performance and sustainability in the energy industry.
- Cirque du Soleil - Advisor to the CFO:
 - ◆ Development of a strategic plan reviewing organic growth, divestitures, initial public offering and potential strategic partners which led to a 1.2 billion US\$
 - ◆ Acquisition offer of a media producer based in Montreal (30 million CA\$)
 - ◆ Acquisition offer of an immersive show producer having assets in the US and Dubai (1.5 million US\$)
 - ◆ Review of the hospitality activities in Las Vegas (Light, Day Light clubs and the Beatle lounge), Los Angeles and Montreal (Maison Alcan), which led to their divestiture
 - ◆ Negotiate the terms for the refurbishment of a casino and the creation of nightclub in Ibiza, Heart, in partnership the brothers Adria and the Ibiza Gran Hotel (12 million US\$)

**New Brunswick System Operator (now NB Power)
2009 - 2013**

The **New Brunswick System Operator (NBSO)** is a statutory corporation responsible for operating the electricity market of 1.2 billion CND/year, directing the operation of the bulk electrical system and insuring the reliability in the province of New Brunswick, Nova Scotia and Prince Edward-Isle in Canada. It is one of eight Independent System Operators in North America.

NBSO is responsible for operating and planning 6,000 megawatts bulk electric power generation and transmission system comprising of terminals and switchyards linked by 6,849 km of transmission lines ranging in voltage from 69 kV to 345 kV.

The NBSO monitors, assesses and enforces compliance with reliability standards and criteria following North American Electric Reliability Corporation's standards and Northeast Power Coordinating Council's criteria.

President & Chief Executive Officer

Responsibilities:

- Report to the Chair and Board of Directors and, in collaboration with the executive team, provide guidance and leadership to this \$1.2 billion power pool and to the reliability operations (transmission and generation) for the Maritimes and Northern Maine
- With the executive team, develop and implement strategic plans to increase revenues
- With the executive team, develop and implement market rules
- With the executive team, develop, implement and enforce reliability standards for the operations
- Lead over 300 employees in this reliability and commercially focused environment during a time of continual change within the electricity market

Accomplishments:

- Interconnect of 500 MW of renewable resources (wind farms) and develop novel methods of assessing the resources needed to balance supply and demand in the power system with large shares of 'variable' renewables, such as wind, with a penetration at low load reaching 45% of the energy produced
- Develop risk management strategies and ensured accurate and transparent management reporting, control of operational activities, continuous improvement in reporting, risk measurement and control
- Carry studies on the reliability impacts related to the shutdown and the re-powering of a nuclear power plant, Pointe Lepreau
- Replacement of a SCADA reaching end of life by one with advanced analytics and forecasting, customer relationship management systems and a redundant architecture supporting store-and-forward capability in order to minimize data gaps (15 million CA\$)
- Carried studies to interconnect the anticipated production of Muskrat Falls and Gull Island to result in a total installed capacity of 3,074 MW on the Provinces of Nova Scotia, New Brunswick and New England through a 1,100 km of HVDC transmission linking Labrador with the island of Newfoundland, and the Maritime Link between the island of Newfoundland and Cape Breton, Nova Scotia that includes 180 km of subsea cable

Northeast Power Coordinating Council - Executive Representative (Reliability Coordinator):

Northeast Power Coordinating Council is responsible for promoting and improving the reliability of the international, interconnected bulk power system in Northeastern North America. Supported the development of power markets, smart-grid, distributed generation and large-scale energy storage systems.

ISO RTO Council - Board Member: The ISO/RTO Council is composed of 10 Independent System Operators and Regional Transmission Organizations in North America. These ISOs and RTOs serve two-

thirds of electricity consumers in the United States and more than 50 percent of Canada's population.

CIGRE Canada - Corporate Member: CIGRE facilitates technical exchanges among those involved in the production, transmission and distribution of electrical energy; communicates the state of the art and the technical knowledge in these fields; informs the decision makers and regulators in the field of high voltage electricity.

**Statoil ASA (Norsk Hydro)
2006-2008**

Statoil ASA is a Norwegian multinational oil and gas company headquartered in Stavanger, Norway. It is a fully integrated petroleum company with operations in thirty-six countries.

Executive Manager - Merger & Acquisition (2005-2008)

Responsibilities:

- Engage and develop relations with third parties and investment banks
- Identify commercial initiatives required to accomplish both corporate goals and objectives
- Drive organic and non-organic mergers, acquisitions, transforming transactions, divestitures and joint-venture projects throughout various phases from strategic target screening up to the mat

Accomplishments:

- Negotiate the partial divestiture of the 315 MW Sheringham Shoal Offshore Wind Farm off the coast of Norfolk in the UK, which was acquired by Statkraft (500 million US\$)
- Structure bids and negotiate Sale and Purchase Agreement and Joint Operating Agreement with Silverstone Energy Limited and Wilderness Energy UK Limited to acquire 50% of their licenses comprising a non-appraised oil discovery on the UK continental shelf
- Structure bids and negotiate Sale and Purchase Agreement with Chevron North Sea Ltd to acquire their total interests in the Mariner and Bressay heavy oil fields on the UK continental shelf.
- Structure bids on the Chukchi Sea Lease Sale off the coast of Alaska where Statoil was awarded 16 leases, of which 14 were joint bids with ENI Petroleum (350 million US\$)

**Hydro Québec
1999-2006**

Hydro-Québec is a public utility that manages the generation, transmission and distribution of electricity in Quebec, Canada. With 63 hydroelectric power stations, the combined output capacity is 36,912 megawatts; Hydro-Québec is the fourth largest hydropower producer in the world. It is supported by a transmission system with 34,292 km of transmission lines and 536 substations.

Chief Commercial Operations - System Control Center - TransÉnergie (2003 – 2006)

The transmission system is managed by **Hydro-Québec TransÉnergie** and is part of the Northeast Power Coordinating Council. It has 15 interconnections with systems in Ontario, New Brunswick and the Northeastern United States with 10,850 MW of interconnection import capacity and 7,994 MW of interconnection export capacity. It manages 14,000 km of fiber optic.

Responsibilities:

- Support the operations, coordination, control and monitoring of the bulk power system, which includes the transmission & telecommunication network and generation facilities needed to maintain system reliability
- Support the planning and expansion of transmission, telecommunication network and generation assets needed to provide efficient and reliable transmission access
- Support the integration of wind farms to the main power grid

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- Manage interregional coordination with adjacent bulk power systems in Northeast America (Ontario, New Brunswick, New England and New York)
- Manage the tariff administration and design ensuring non-discriminatory transmission service

Accomplishments:

- Negotiate new operational agreements for 11,000 MW of interconnections with the States of Maine, New York and Vermont, and the Provinces of Ontario and New Brunswick
- Interconnect to the power grid a 550 megawatt natural gas-fired cogeneration power plant located in the Bécancour Industrial Park, near Trois-Rivières, which was to supply its entire power output to Hydro-Québec Distribution under a 20-year power purchase contract. The plant was also supply steam to certain major businesses, such as Norsk Hydro, located within the industrial park
- Develop standards and operational protocols for the interconnection of wind farms to the high voltage power grids in the Gaspésie peninsula and installation of capacitor banks to provide voltage support
- Following the emergence of wholesale power markets (IESO, PJM and ISONE), enforcement of reliability standards by NERC and interconnection of intermittent energy resources, develop an advanced energy management system with SNC Lavalin to monitor, control, and optimize the performance of the generation and transmission system and a dispatcher training simulator

Head Origination & Wholesale Trading - HQ Production (1999-2002)

Hydro-Québec Production generates power for the Québec market and sells its surpluses on wholesale markets. It is also active in arbitraging and purchase/resale transactions.

Responsibilities:

- Represent HQ Production with North American's wholesale markets, such as IESO, NYISO, PJM and ISONE, and third parties
- Develop business opportunities, trading and hedging strategies
- Forecast & optimize 1445 MW of installed capacity associated to 8 run of the river power plants
- Negotiation power purchase agreements
- Assure compliance with market rules and reliability standards

Accomplishments:

- Negotiate new operational and commercial agreement for a run of the river power plant on the Outaouais River, Chat-Falls of 92 MW of installed capacity, with water rights shared between Ontario Power Generation and Hydro Quebec Production
- Create the trading division for the Ontario power market administered by the IESO

Commercial Advisor, International Business Developments - HQ International (1999)

HQ International (HQI) makes long-term investments in power companies and large-scale energy assets and commercializes the expertise of Hydro-Quebec

Responsibilities:

- Manage business developments and deal executions in Senegal, Cameroon, Australia and South America
- Carry commercial and technical analysis, structure and close transactions for the acquisition of infrastructures
- Represent HQI in joint-ventures such as the Fortuna Dam which is an embankment dam in western Panama with 300 MW of installed capacity supplying 30% of the national load
- Commercialize technical services

Accomplishments:

- 20% investment (80 million \$CA) in Meiya Power Company Limited, which develops hydro projects in Asia with a primary focus on China
- Lead due diligence for the acquisition of 34% of Senelec's shares for consortium of Hydro-Québec and Elyo (Suez Lyonnaise des Eaux)
- Advise for the development of Murraylink, which is an Australian high voltage direct current electricity transmission link between Berri in South Australia and Red Cliffs in Victoria, connecting the two state electricity grids: two 180-kilometre (110 mi) long bipolar HVDC cables, which are underground, with an operating voltage of 150 kV and a transmission capacity of 220 megawatts.

Canadian Ministry of Foreign Affairs and International Trades
Consulate of Shanghai
1997-1998

Commercial Officer

Responsibilities:

- Support and represent the commercial policies of the Canadian Government
- Support and represent the commercial interests of Canadian industries
- Support Chinese industries exporting to Canada

Accomplishments:

- Support AECL in reaching an agreement with Hydro Quebec to train more than 200 Chinese nuclear operators in Gentilly, Quebec for the nuclear power plant being constructed in China with two CANDU 6 reactors for the Third Qinshan Nuclear Power Company Ltd

Education:

Juris Doctorate (J.D.) - 1991-1994

University of Montreal

Bachelor of Arts (B. A.) in History - 1988-1996

University of Montreal