Muskrat Falls Project Timeline

Phase 1: Sanction

Early twentieth century	Surveys recognize the hydroelectric potential of the Churchill River. There are three particularly attractive sites: **Churchill Falls**, **Gull Island**, and **Muskrat Falls**.
1961	The Government of NL (**GNL**) grants the Hamilton Falls Power Corporation (later called the Churchill Falls (Labrador) Corporation Limited or **CFLCo**) a 99-year lease to the water rights at and upstream of Churchill Falls.
1966	CFLCo begins construction on Churchill Falls Generating Station. When completed, it has a large reservoir and is capable of producing 5,428 MW of power and an average of 35,000 GWh of energy per year. **Power** is the rate at which energy can be produced. **Energy** is the total amount of energy produced over a period of time. One megawatt hour (MWh) of energy is 1 megawatt (MW) of power produced for 1 hour; 1 gigawatt hour (GWh) is 1,000 MW of power produced for 1 hour, or 1 MW produced for 1,000 hours.
1969	CFLCo and Hydro-Québec sign a contract for the sale of the power from the Churchill Falls Generating Station. The original term of the contract runs until 2016; a mandatory renewal term runs until 2041. Under both terms, CFLCo has the right to retain up to 300 MW of power or 2,362 GWh of energy (the **recall block**) and an additional block of 250 MW of power (the **Twinco block**).
1971	First power from Churchill Falls Generating Station.
1972	GNL starts exploring options for developing the **Lower Churchill**, i.e. Gull Island and Muskrat Falls.
1974	GNL purchases 65.8% of CFLCo's shares. It eventually passes its shares to **Newfoundland and Labrador Hydro**, a publicly owned utility company that produces most of the power on the Island of Newfoundland. The remaining 34.2% of shares are owned by Hydro-Québec.
1976	GNL, relying on the provisions of the 1961 water rights lease, requests 800 MW of power from CFLCo to meet domestic demand.
1978	GNL and the Government of Canada create the Lower Churchill Development Corporation to develop the Lower Churchill.
1980	The Lower Churchill Development Corporation recommends to GNL and the Government of Canada that Gull Island and Muskrat Falls "should be exploited at the earliest possible opportunity". The Lower Churchill Hydroelectric Environmental Assessment Panel files a report allowing development at Gull Island and Muskrat Falls, but the project does not proceed.
1980	GNL passes the Upper Churchill Water Rights Reversion Act, attempting to expropriate CFLCo's water rights on the Churchill River.
1984	The Supreme Court of Canada holds that Upper Churchill Water Rights Reversion Act was an unconstitutional attempt to interfere with an interprovincial power contract.

1988 The Supreme Court of Canada holds that the 1961 lease does not allow GNL to recall 800 MW of power from CFLCo.

1998 Premier Brian Tobin and Québec Premier Lucien Bouchard announce negotiations to develop Gull Island and to expand the capacity of the Upper Churchill.

1999 SNC-AGRA Joint Venture provides a Final Feasibility Study for the Muskrat Falls Hydroelectric Development to NL Hydro, concluding that the project is "economically feasible, cost efficient and attractive". The capital cost estimate for the generating facility is $965,226,000.

2000 GNL exempts any hydro developments on the Churchill River from oversight by the **Board of Commissioners of Public Utilities** (**PUB**), the regulatory body that sets power rates and oversees most generation and transmission developments in NL.

2002 Premier Roger Grimes announces an agreement in principle with Hydro Quebec to develop the Lower Churchill, but subsequent negotiations fail.

2003 Danny Williams wins a majority government.

January 2005 GNL and NL Hydro request Expressions of Interest from partners to develop the Lower Churchill.

July 2005 Ed Martin appointed CEO and President of NL Hydro and CFLCo.

January 2006 NL Hydro applies to Hydro-Québec TransÉnergie for permission to use the Churchill Falls power lines to transmit power from the Lower Churchill into Ontario, New England, New Brunswick, and New York. When the applications lead to a dispute about available transmission capacity and deadlines, Nalcor files complaints with the Quebec energy regulator, the **Régie de l'énergie**.

January 2006 NL Hydro outlines an early version of the Decision Gate process, a multi-stage decision-making framework that will shape the Lower Churchill development. A later version of the process is outlined in document LCP-PT-MD-0000-PM-PR-0001-01 Rev. B1:

"The use of formal Decision Gates facilitates decision-making by the Gatekeeper of the readiness of a project to move from one phase to the next, whereby the capital intensity of the phase increases.
…

The Decision Gates contained within the Gateway Process are:

Decision Gate 1 – Approval to Proceed with Concept Selection
Decision Gate 2 [**or DG2**] – Approval of Development Scenario and to Commence Detailed Design
Decision Gate 3 [**or DG3**] – Project Sanction
Decision Gate 4 – Approval to Commence First Power Generation
Decision Gate 5 – Approval to Commence Decommissioning"

May 2006 Premier Danny Williams announces that, having reviewed all the expressions of interest, "the province in partnership with Newfoundland and Labrador Hydro will lead the development of the Lower Churchill".

November 2006 NL Hydro submits a project description to GNL and the Government of Canada for the Lower Churchill generation project. It describes the Gull Island and Muskrat Falls generating stations and transmission lines connecting the generating facilities to Churchill Falls, but not the Labrador–Island Link. The project description will allow GNL and the Government of Canada to determine whether an environmental assessment is necessary under provincial and federal legislation, respectively.

January 2007	GNL passes "water management" legislation allowing the PUB to order two parties who each have the right to generate power from the same river to enter into an agreement to "result in the most efficient production, transmission and distribution of power".
January/February 2007	GNL and the Government of Canada determine that the Lower Churchill generation project requires an environmental assessment under both provincial and federal legislation. The two governments agree to set up a **Joint Review Panel (JRP)** to assess the project for joint environmental approval and also to assess the project's effects on indigenous rights.
September 2007	GNL releases an Energy Plan, *Focusing Our Energy*, which outlines "how we will develop and utilize our energy resources to benefit the people of the province today as well as future generations".
October 2007	GNL creates a new publicly owned energy corporation, **Nalcor Energy**, which will administer NL Hydro; NL Hydro's interest in CFLCo; the province's oil and gas assets; the Bull Arm Fabrication Site; and the Lower Churchill Project.
September 2008	GNL and the Innu Nation sign the Tshash Petapen (New Dawn) Agreement, resolving key issues surrounding a Land Claims Settlement, an Upper Churchill Redress agreement providing compensation for the original Churchill Falls development, and an Impact Benefits Agreement providing compensation for the proposed Lower Churchill development.
January–March 2009	Nalcor registers a project description for a Labrador Island Link with GNL and the federal government. They decide that an environmental impact statement is required and agree to issue joint environmental statement guidelines.
March 2009	Nalcor and CFLCo management negotiate a draft water management agreement. The draft agreement is not approved by CFLCo's board.
March 2010	The PUB imposes a water management agreement on Nalcor and CFLCo. The terms are the same as the draft agreement: Nalcor will be able to provide energy to meet Hydro-Québec's energy demands and afterwards collect the energy when the Churchill Falls Generating Station has spare capacity.
May 2010	The Régie de l'énergie dismisses Nalcor's complaints against Hydro-Québec TransÉnergie.
July 2010	NL Hydro releases annual Generation Planning Forecast showing generating capacity deficits—an inability to meet peak loads—starting in 2015. Energy deficits are also forecast starting in 2021.
July 14, 2010	GNL releases the Lower Churchill Benefits Program: "All the work for the projects that can be performed in Newfoundland and Labrador shall be performed in Newfoundland and Labrador".
November 16, 2010	DECISION GATE 2: Approval of the Muskrat Falls development scenario. The development scenario consists of (1) a dam and generating station at Muskrat Falls (**MFGS**), with a capacity of 824 MW of power and an estimated average annual energy production of 4.9 TWh. (2) The **Labrador Transmission Assets** (**LTA**), high-voltage cables to transmit power between Muskrat Falls and the Churchill Falls Generating Station. (3) The **Labrador Island Link** (**LIL**), high-voltage cables capable of transmitting 900 MW of power from Muskrat Falls through Labrador, under the Straight of Belle Isle, and across the Island to arrive at Soldier's Pond on the Avalon Peninsula.

	Together, these assets are estimated (at DG2) to cost $5 billion plus interest during construction (**IDC**) and financing costs (allowance for funds used during construction or **AFUDC**).
November 18, 2010	Nalcor signs a term sheet with **Emera Inc.**, a publicly traded energy utility company with headquarters in Halifax, NS., to pay for and build the **Maritime Link (ML),** a 500 MW high-voltage connection from Granite Canal, NL to Woodbine, NS. The ML may be used to export surplus power from Muskrat Falls through Nova Scotia. The ML is estimated at DG2 to cost $1.2 billion plus IDC, AFUDC and other financing costs. The term sheet is based on the “20 for 20 principle”: Emera would pay 20% of the total capital costs in exchange for 20% of the energy and capacity from Muskrat Falls: • Emera would pay the costs of constructing the ML (about 20% of the total project costs, based on the $1.2 billion estimated cost of the ML and the $5 billion estimated cost of the MFGS, LIL, and LTA). • Emera would also give Nalcor transmission rights through the ML, Nova Scotia, and New Brunswick. • After 35 years, Emera would transfer ownership of the ML to Nalcor. • In exchange, Emera would for 35 years receive 980 GWh per year—20% of the estimated average energy from Muskrat Falls—transmitted during daytime hours from 7 am to 11 pm. • Emera would also receive an additional block of power for the first five years, as a substitute for energy not delivered in the last 15 years of the ML’s 50-year service life, and the right and obligation to invest in the LIL • Nalcor would also receive the opportunity to invest in future investments being considered by Emera up to the amount invested in the LIL by Emera, on similar terms and conditions as those provided by Emera.
December 3, 2010	Premier Danny Williams resigns.
February 1, 2011	Nalcor Energy awards an **EPCM contract**—a contract to provide engineering, procurement, and construction management services for the Muskrat Falls Project, excluding the undersea cable crossing through the Strait of Bell Isle and the Maritime Link—to **SNC-Lavalin Inc.**
February 23, 2011	GNL applies for a **Federal Loan Guarantee**. Loans guaranteed by the federal government have a lower interest rate, so a guarantee from the federal government could reduce the project’s interest and financing costs.
March–April 2011	JRP holds hearings for Indigenous, stakeholder, and public consultation and participation.
June 17, 2011	GNL submits a reference question to the PUB, asking it whether the MFGS, LTA, and LIL “represent the least-cost option for the supply of power to Island Interconnected Customers over the period of 2011–2067, as compared to the **Isolated Island Option**”. The Isolated Island Option is a particular combination of thermal, small-scale hydro, and wind generation on the Island designed to meet the Island’s energy needs. The PUB is directed not to consider the Maritime Link and instead to assume “that any power from the Projects which is in excess of the needs of the Province is not monetized or utilized”.
June 2011	Innu Nation votes in favour of the Innu Land Claims Agreement, the Impact Benefits Agreement, and the Upper Churchill Redress Agreement. They are officially signed in November.

June 30, 2011	The PUB engages **Manitoba Hydro International (MHI)**, an electrical power consulting company owned by Manitoba Hydro, to advise it.
August 10, 2011	Nalcor releases DG2 Capital Costs and Schedules Estimate.
August 19, 2011	The governments of Canada, NL, and NS reach a memorandum of agreement indicating that the federal government will provide a loan guarantee for the projects.
August 25, 2011	The Joint Review Panel files a report containing 83 recommendations, including recommending an independent review of whether the Project was the least-cost option for meeting domestic demand.
September 14, 2011	Navigant Consulting Inc. releases a report, commissioned by Nalcor, concluding that the Muskrat Falls Project is "the long-term least cost option for the Island of Newfoundland".
September 22, 2011	The PUB writes the Minister of Natural Resources indicating that it "cannot meet the December 30, 2011 deadline" but that "it is not formally requesting an extension at this time because we cannot provide a realistic alternate date until we have a better idea as to when Nalcor will answer the outstanding information requests".
October 11, 2011	Premier Kathy Dunderdale wins a majority government.
October 18, 2011	GNL gives Nalcor a **Commitment Letter** indicating that GNL will provide base and contingent equity financing as necessary and will guarantee that Nalcor will recover its costs from the Muskrat Falls Project.
November 2011	GNL and GNS enter a memorandum of understanding for a benefits framework for the Maritime Link, including a hiring protocol.
December 2011	The Minister of Natural Resources advises the PUB on December 12 that it is imperative that its report be received by March 31, 2012. In response, the PUB requests on December 16 that the deadline be extended until June 30, 2012. This request is denied on December 23.
January 27, 2012	MHI gives the PUB its report, concluding that "the Muskrat Falls Generating Station and the Labrador-Island Link HVdc projects represent the least-cost option of the two alternatives, when considered together with the underlying assumptions and inputs provided by Nalcor".
March 15, 2012	GNL and the federal government respond to the JRP report, accepting some recommendations but rejecting others. They release the MFGS and the LTA from further environmental assessment.
March 30, 2012	PUB releases report concluding that because the information provided by Nalcor is not detailed, complete, or current enough, they are unable to determine whether the MFGS, LTA, and LIL are the least-cost option.
April 2012	Nalcor releases the Environmental Impact Statement for the Labrador–Island Link.
April 10, 2012	The federal Natural Resources department releases "Economic Analysis Lower Churchill Hydroelectric Generation Project", concluding that "[u]nder most of the sensitivity analyses the Project was found to be the lowest cost option except under a low demand growth scenario".
April 26, 2012	GNL issues a cabinet directive on amending legislation to meet the requirements of the Commitment Letter. When passed, the legislation exempts Muskrat Falls Project from PUB oversight, allows GNL to direct the PUB to include the costs of the Muskrat Falls Project in NL Hydro's regulated rates, requires NL Hydro enter into a power purchase agreement and transmission funding agreement with Nalcor to cover Nalcor's costs, makes NL Hydro the sole

	supplier of electricity to NP and industrial customers, removes the MFP from borrowing limits, and limits Crown liability.
April 30, 2012	Minister Jerome Kennedy informs the House of Assembly that Nalcor CEO Ed Martin assures him that the international corruption allegations against SNC-Lavalin Inc will not affect the Muskrat Falls Project.
July 31, 2012	Final Emera Agreements signed by GNL, GNS, Emera, and Nalcor.
August 7, 2012	A report by Hatch Energy concludes that a "wind energy penetration rate of 10% is the maximum recommended for the Island of Newfoundland system".
October 30, 2012	GNL releases the DG3 cost estimate: $6.2 billion for the MFGS, LTA, and LIL, including contingency but excluding IDC and AFUDC. GNL also releases a report from MHI that supports Nalcor's conclusion that the Muskrat Falls Project is the least-cost option, compared to the Isolated Island option.
October 31, 2012	GNL releases a report from MHI on wind power that concludes that "Nalcor has incorporated the maximum amount of wind generation in the Isolated Island option based on the results of these studies".
November 1, 2012	GNL releases a report by Ziff Energy Group, an international energy consulting firm, on natural gas. The report concludes that neither Grand Banks pipeline-supplied natural gas nor liquefied natural gas were viable alternatives to Holyrood generation.
November 9, 2012	GNL releases three reports on alternatives to Muskrat Falls: "Upper Churchill: Can We Wait Until 2041?", "Gull Island: Why Not Develop Gull Island First?", and "Legal Options: s. 92A, Good Faith and Regulatory Options in Quebec".
November 26, 2012	GNL releases a report by Wood McKenzie reviewing Ziff Energy Group's conclusion that natural gas was not an option: "If anything, Wood Mackenzie's estimates of costs in this area would tend to be higher, rather than lower than those determined by Ziff."
November 30, 2012	A Term Sheet is released for the Federal Loan Guarantee. The Federal Government will guarantee up $5 billion of debt for the Muskrat Falls Project and $1.3 billion of debt for the Maritime Link, all contingent on the sanction and financial close of both Muskrat Falls and the Maritime Link.
December 17, 2012	DECISION GATE 3: Official Sanction Premier Dunderdale sanctions the Muskrat Falls Generating Station, the Labrador Transmission Assets, and the Labrador–Island Link, allowing Nalcor to begin construction activities. Sanction does not give Nalcor access to Federal Loan Guarantee funds. Satisfying the preconditions of the Federal Loan Guarantee will take most of 2013.