

Muskrat Falls Project



Spillway construction at Muskrat Falls. Courtesy: Nalcor Energy.

Project Overview

The lower Churchill River is one of the most attractive undeveloped hydroelectric sites in North America and is a key component of the province's energy resource portfolio. The Muskrat Falls hydroelectric development on the lower Churchill River in Labrador includes construction of an 824 megawatt (MW) hydroelectric generating facility and more than 1,600 km of associated transmission lines in Newfoundland and Labrador linking the island to Labrador, and the Maritime Link between the island of Newfoundland and Nova Scotia. The clean, renewable electricity from the Muskrat Falls Project will provide an opportunity for the province to meet its own domestic and industrial needs in an environmentally-sustainable way, and also export excess electricity to other jurisdictions where the demand for clean, renewable energy continues to grow.

Construction on the Muskrat Falls Project commenced in late 2012 and progress is being made across all areas of the project.

Project Advancements in 2015

Construction on all components of the project advanced significantly in 2015, with work underway between Churchill Falls and the Avalon Peninsula.

At Muskrat Falls, concrete placement for the spillway piers and separation wall was completed, and installation of the spillway gates began in preparation for river diversion in 2016. Construction also started on the north and south dams that will span the lower Churchill River. Progress continued on the manufacturing of the spillway gates, turbines and generators with manufacturing of the gates 70 per cent complete and the turbines and generators around 60 per cent complete by the end of 2015. North Spur stabilization work also substantially advanced in 2015 with completion of the upstream cut-off wall and advancement of both the upstream and downstream slope stabilization scopes.

For transmission line work in Labrador between Muskrat Falls and Churchill Falls, all access road construction and right-of-way clearing was completed. More than 85 per cent of transmission towers were erected and close to 70 per cent of all conductor (wire) stringing for the 500 km transmission line was completed by the end of the year.

Construction on the 1,100 km Labrador-Island Transmission Link advanced in Labrador and on the island throughout 2015. In Labrador, over 90 per cent of access road construction and right-of-way clearing was completed, more than half of all tower foundations were installed, and approximately 20 per cent of the towers were erected. On the island, half of all access road construction and clearing activities for the transmission line right-of-way was completed in 2015, and installation of tower foundations began on the Northern Peninsula.



Land Cable Trench, Shoal Cove. Courtesy: Nalcor Energy.

Construction continued to advance for the new switchyards at Churchill Falls, Muskrat Falls and Soldiers Pond, the High Voltage direct current (HVdc) converter stations at Muskrat Falls and Soldiers Pond and the Synchronous Condenser facility

at Soldiers Pond. Manufacturing was completed for the 13 power transformers required for the project's switchyards and were delivered to their respective sites at Churchill Falls, Muskrat Falls and Soldiers Pond by the end of the year. Civil works for the project's two grounding stations, one located at L'Anse au Diable, in Labrador and the other located at Dowden's Point in Conception Bay South, was completed in the fall of 2015.

For the Strait of Belle Isle marine cable crossing, the land cables that will connect the submarine cables to the overhead transmission line from Muskrat Falls to Soldiers Pond were installed on both sides of the Strait this past year. Manufacturing of the marine cables was also completed. Quarrying of approximately 450,000 tonnes of rock that will be used to protect the subsea marine cable was completed, along with the quayside at Forteau that will be used to load the rock-laying vessel. Work on the Strait of Belle Isle marine cable crossing is on track for substantial completion in the fall of 2016.

Economic and employment benefits from the Muskrat Falls Project are being realized across the province. In 2015, employment on the project peaked at more than 5,300 people; 85 per cent of those workers were residents of Newfoundland and Labrador.



Muskrat Falls team photo. Courtesy: Nalcor Energy.

In December 2015, the Government of Newfoundland and Labrador, through the Muskrat Falls Oversight Committee, engaged Ernst Young to conduct an independent review of the cost, schedule and associated risks of the Muskrat Falls Project.

At Nalcor's Annual General Meeting in March 2016, Nalcor noted that the current capital cost forecast of \$7.65 billion was under review and that an update would be provided upon final completion of this work.

Investing in Newfoundland and Labrador

Advances in construction on the Muskrat Falls Project are generating significant benefits for businesses and labour in Newfoundland and Labrador and helping drive the provincial economy.

In 2015, employment on the project peaked at more than 5,300 people and approximately 85 per cent of those workers were residents of Newfoundland and Labrador. Since the start of construction to the end of 2015 more than \$1.1 billion in wages has been paid to workers from the province and over \$1 billion has been spent with Newfoundland and Labrador-based businesses.

Aboriginal Affairs

Following execution and ratification of the Tshash Petapen (New Dawn) Agreements, Nalcor commenced implementation of the Impact and Benefits Agreement (IBA) with the Innu Nation.

All joint Nalcor-Innu Nation committees required under the IBA have been established. By the end of December 2015, the \$140 million procurement commitment outlined in the IBA with the Labrador Innu Nation was exceeded, with more than \$500 million in contract value awarded to Innu-owned businesses or joint ventures.

Reflecting Nalcor's commitments outlined in the project's Gender Equity and Diversity Program, in 2015, employment of Newfoundland and Labrador residents who self-identified as a member of an Ab-

original group reached a peak of 594 workers. Employment of Labrador Innu peaked at 212 workers. Recognizing the need to build local capacity in central Labrador where the Muskrat Falls hydroelectric generation facility is being built, in early 2010, the Labrador Aboriginal Training Partnership (LATP) was established. Nalcor Energy, the provincial and federal governments, and Labrador's three aboriginal groups provided funds and in-kind contributions to support education and training initiatives to help Labrador aboriginal people gain the skills and qualifications needed for employment opportunities with the Muskrat Falls Project. In 2015, LATP received a one-year extension to the existing funding program. During the year 120 LATP clients gained employment on the Muskrat Falls Project – more than double Nalcor's original employment estimate for 2015. Nalcor's work with the LATP and contractors continues today to build local capacity through education and training.

Committed to Environmental Stewardship

Nalcor is committed to maintaining a high standard of environmental responsibility that will help sustain a diverse and healthy environment for generations of Newfoundlanders and Labradorians.

Environmental protection plans have been developed for the generation and transmission projects and have been submitted to, and approved by, the provincial government. Environmental effects monitoring programs were initiated for many environmental components in 2013 and continued throughout 2015.

Environmental management on the Muskrat Falls Project continued in 2015 as construction on the project progressed to more than 33 work fronts across the province. To date, 21 environmental effects monitoring plans for the generation and transmission components have been implemented and are ongoing to ensure that commitments and conditions of the project's environmental assessments are met.



Site of the marine cable crossing, Forteau. Courtesy: Nalcor Energy.