

Muskrat Falls Project Oversight Committee

Quarterly Project Update

Period Ending June 2021

November 29, 2021

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1. Q2 2021 Cumulative Costs



2. Q2 2021 Planned and Incurred Costs





3.0 Oversight Committee Reporting

- 3.1 Overview
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3.1 Overview

- The Oversight Committee (Committee) receives details on project costs incurred, schedule progress, changes in costs and milestone schedule, the status of construction, and manufacturing and installation contracts.
- The Committee identifies risks and issues and follows up with Nalcor to obtain more detail and explanation.
- This report covers the April 2021 to June 2021 reporting period (Q2).
- Section 3 of this report contains information developed by the Committee.
- Section 3.5 of this report includes recent information on notable activity beyond the Q2 reporting period ending, and up to the date of drafting this report (October 15, 2021). Project update information in this section supersedes information as reported in other sections of this report.
- Section 4 contains project cost and schedule information as reported by Nalcor for the reporting period ending June 2021 which includes project activity updates to mid-August 2021.
- The Annexes contain a more detailed accounting of the information provided in this report.
- The next Committee Report will cover the reporting period July 2021 September 2021.

3.2 Committee Activities

- The Committee met on four occasions during the Quarter to receive project updates and conduct other Committee business including a meeting with Natural Resources Canada (NRCan) and the Independent Engineer (IE). Committee meeting minutes and reports are available on the Committee website @ <u>Click here</u> and <u>Click here</u>.
- The Committee Chair and/or Industry, Energy and Technology (IET) officials participated as an observer in three monthly calls on Nalcor project reporting to the IE and Natural Resources Canada and two calls with the IE and NRCan.
- The Committee Chair and IET officials participated in two calls with Nalcor Transition to Operations (TTO) officials to receive project updates.
- In person visits to project sites continued to be placed on hold due to COVID-19 pandemic travel and physical distancing restrictions during the April – June 2021 period.

3.3 Independent Engineer Activities

• Project and other site visits have been impacted by COVID-19 travel restrictions. The Independent Engineer (IE) continues to monitor the project remotely and information exchanges are ongoing during this period.

- In its project reporting, Nalcor identifies risks which may impact project cost and schedule. The Committee reviews these and other project information to assess project risks. These risks can be found on pages 10-13 of this report.
- Over the reporting period the Committee notes:
 - Final valve hall remediation has been completed;
 - LITL bipole final software schedule delivery and commissioning risk continues to increase;
 - Synchronous condenser vibration remediation using elliptical bearings is complete on units 3 and 2 with units commissioned and operating;
 - Powerhouse unit 2 was released for service in June 2021;
 - Litigation and arbitration proceedings continue with Astaldi; and
 - Nalcor/NLH preparedness for interconnection and operations following transfer of power and final completion of bipole remains a key focus area.

- The project is now largely in the installation, integration and static and dynamic commissioning phases which inherently carry associated risks.
- Risks that are being tracked by the Committee include:
 - A) Safety Performance
 - Risk associated with simultaneous operations across multiple work sites, impact on project delivery particularly in the powerhouse, energized yards and other assets. This risk will continue through construction into operations.
 - B) Contractor Management and Productivity
 - Nalcor ability to manage contractors and contractor ability to meet schedule;
 - Contractor management and performance;
 - Potential commercial negotiations to settle claims; and
 - Potential for new claims as construction nears completion.

C) Phased Commissioning

- Completion of P&C software to enhance functionality and reliability; associated warranty considerations with early asset handover during commissioning and completion;
- Final completion and testing of HVdc system under low and full power, in-service system reliability, and timing of contractor release and effective warranty period; and
- P&C software delivery and final commissioning completion to meet project schedule; remaining software work beyond dynamic commissioning and long term system performance.
- D) Astaldi
 - Astaldi arbitration/litigation outcomes and potential impact on project costs.
- E) Synchronous Condensers
 - Remediation of vibration and other commissioning issues; potential impact on project schedule and long term performance.

F) Insurance Claims and Coverage

- Potential coverage: Preservation/re-preservation of Turbine and Generator parts investigations ongoing claim is still active, and resolutions are part of ongoing commercial discussions with Andritz.
- Partial coverage confirmed: Spillway secondary concrete (\$1M and gate guide heater tubulars repairs (\$2 Million) – Initial payment of \$3 Million (net of deductible) has been received and transferred to Andritz to cover their direct costs and their contractors - Further recovery is pending.
- Potential coverage: Valve Hall remediation potential claim being pursued.
- G) LITL and Powerhouse Commissioning
 - Commissioning of LITL and powerhouse generation units 3 through 4 and project schedule.
- H) Project Integration and Operations Readiness
 - Nalcor/NLH readiness to connect the Muskrat Falls Project to the Island and North American electricity grid and operate facilities effectively.

- I) Additional Risks (above the September 2020 Project Budget)
 - COVID-19 cost and schedule impacts;
 - Astaldi arbitration/litigation;
 - Failure to meet revised schedule milestones (unknown); and
 - Any significant legal costs due to new disputes with contractors (unknown).
 - Funds are not held within the September 2020 Project Budget for these additional risks.

- In June 2021, the provincial government announced that Nalcor Energy operations will move under Newfoundland and Labrador Hydro. This transition is currently ongoing but for the purposes of this report Nalcor is used.
- In May 2021, GE Grid changed its name to GE Canada (GE). ٠
- In July 2021, three independent Committee members visited the Soldiers Pond Converter station for a site tour of facilities.
- The Independent Engineer attended site visits at the Soldiers Pond converter station and Muskrat Falls ٠ powerhouse and converter stations and participated in various meetings through the week of July 13-16, and October 5-8, 2021. The Committee Chair and IET officials also participated in various meetings.
- A new amending agreement was reached with GE effective July 27, 2021. •
- In July, August, September and October 2021, Nalcor provided the Newfoundland and Labrador Board of Commissioners of Public Utilities (PUB) with monthly updates in response findings of the Liberty Consulting Group Eight Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System.
- In August, 2021, Newfoundland and Labrador Hydro presented second quarter 2021 financial results for ٠ Nalcor Energy. Further information is available on the Newfoundland and Labrador Hydro website @ Click here.
- In September 2021, Mr. Dave Billard, Independent Committee Member, concluded his work with the Committee, The Committee wishes to thank Mr. Billard for his valued contribution to the Committee.
- In September, 2021 the Committee Chair witnessed virtual GE FAT testing of final bipole software. ٠
- In September 2021, the Nalcor Board approved revisions to a number of the Lower Churchill project budgets ٠ through reallocation of undrawn contingency amounts. These revisions will be detailed in Q3 Committee reporting, following receipt of monthly project reporting documents for the period.

- In September 2021, Power Supply advised:
 - Final Bipole Software and Commissioning Completion
 - GE is progressing through final bipole software testing stages slower than planned due increased time required to resolve punches, mainly software bugs. Post Factory System Test (FST2) bug discovery and resolution is causing continued delays for GE.
 - The August Independent Third Party (ITP) Audit reported that GE's new planned Factory Acceptance Test (FAT) start date is by September 6, 2021, with a completion date by September 16, 2021. GE has scheduled 11 days to complete the FAT.
 - FAT did not start on September 6 as planned. GE has advised that they require more time to resolve outstanding issues. GE will provide a status update on FAT start and schedule by the end of the week.
 - GE is planning to start a two week dynamic commissioning period immediately following completion of FAT.
 - The next ITP audit is scheduled for September 29, 2021.

<u>GE Final Bipole Schedule (September)</u>

GE Milestones	Sept 2020 AFE	GE Schedule
FAT Complete	May 31, 2021	September 16, 2021*
Dynamic Commissioning Complete	August 26, 2021	September 30, 2021*
Trial Operations: Start**	August 26, 2021	September 30, 2021*

*GE to provide FAT and schedule update by end of week

**Trial operations is complete after 30 consecutive days of power transfer without a system trip attributed to the HVdc system.

LCP recognizes the risk to further schedule delays; however, now that construction and software development are complete, and considering the advanced stage of software testing, as well as the unpredictability of bug detection and resolution, it is no longer meaningful for LCP to provide its own assessment of GE's schedule as the level of accuracy to forecast completion dates would be extremely low. LCP will continue to report GE's schedule.

 Power Supply notes that risk to final bipole completion schedule beyond the current November 26, 2021 schedule is very high.

- In mid-October 2021, Power Supply advised:
 - Final Bipole Software and Commissioning Completion
 - FAT1 started on September 13, 2021, and was complete on September 18, 2021.
 - After review of the FAT1 results it was determined that the software contained critical bugs that require resolution before it can be released to site for dynamic commissioning.
 - GE are now working to resolve critical bugs; both bugs known before the start of FAT1 and bugs discovered during FAT1.
 - After GE competes the bug fixes they will perform regression testing on the new version of software and a second round of FAT before releasing it to site for dynamic commissioning activities and start of trial operations.
 - Nalcor is awaiting a revised schedule from GE.
 - Due to continued final bipole software delays by GE, the November 27, 2021 overall project commission date is now not achievable.

• <u>GE Bipole Schedule (October)</u>

GE Milestones	Sept 2020 AFE	GE Schedule
FAT Complete	May 31, 2021	Mid November 2021*
Dynamic Commissioning Complete	August 26, 2021	Early December 2021*
Trial Operations: Start**	August 26, 2021	Early December 2021*

*GE to provide a detailed schedule

**Trial operations is complete after 30 consecutive days of power transfer without a system trip attributed to the HVdc system.

• In mid-October, Power Development advised:

Unit	Status
1	Activities for generator stator bar replacement are complete. During routine operations maintenance of the unit there was a release of oil within the unit. While no oil was released to the environment, cleanup within the unit is required; the unit is expected to be offline until mid-October in order to complete this work, as well as some other warranty work.
2	In late September 2021, the unit tripped several times due to vibration. The unit is currently dewatered and inspections are ongoing to determine the root cause and any required remedial work. Unit 2 was returned to service on October 15, 2021.
3	Currently operating and planning continues with Andritz and Operations to complete remaining punch list items.
4	Commissioning activities ongoing; water up and 1st turn is complete. Over speed testing ongoing. Forecast for Release for Service remains as end of October 2021; however, unforeseen events during commissioning could shift the completion to early November 2021.

 Muskrat Falls Generation remains on track to reach commissioning complete by November 2021.

Overall Project Date Certain

- Due to further delays by GE, completion of Trial Operations, which triggers the issuance of the LITL Commissioning Certificate, will not occur prior to the current Date Certain date of November 30, 2021.
- Power Supply will prepare the documentation required for the Date Certain extension request by October 30, 2021.
- A detailed schedule from GE is required before the extension request is submitted.



4.0 Nalcor Reporting

- 4.1 Summary Quarter Ending June 2021
- 4.2 Project Expenditures
- 4.3 Contingency
- 4.4 Earned Progress

*Information in this section was provided for period ending June 2021 project reporting which includes project activity updates to mid-August 2021. Recent updates to this section can be found in Section 3.5.

June 2021 Summary:

- Overall construction progress is at 99.3% (December 2019);
- \$9,925 Million in incurred costs; and
- \$9,932 Million in committed costs.
- As of June 2021, the September 2020 budget final forecast cost remains unchanged.
- While the overall budget and final forecast cost remains unchanged, variances between the project budget and final forecast costs have occurred within and among expenditure categories. Most variances are related to the transfer of budget between allocations from the contingency budget to the procurement, construction, and Transition To Operations (TTO) budgets.
- Does not include Additional Risks as reported on slide 13, which at the end of June 2021, known risks totaled approximately \$450 Million. If these risks are realized, they may become project costs.
- The current forecast contingency budget at June 2021 is \$57.7 Million, a decrease of \$2.2 Million from the previous Quarter.
- For further detail see Section 4.3.

Quarterly Planned vs Incurred Cost Variances:

MFGen	
Cumulative Planned: \$5,481M	Q2 2021 Planned: \$73M
Cumulative Incurred: \$5,432M	Q2 2021 Incurred: \$52M
Variance: -\$49M (-0.9%)	Variance: -\$21M (-28.8%)

- Planned expenditure by month was set in September 2020.
- During Q2 2021, the variance in planned vs. incurred cost is primarily due to lower use of contingency, as well as lower than planned expenditure on turbines and generators and balance of plant contracts, as well as Owners costs.
- See Section 4.2 and Annex B for further detail.

Quarterly Planned vs Incurred Cost Variances:

LITL	
Cumulative Planned: \$3,709M	Q2 2021 Planned: \$40M
Cumulative Incurred: \$3,626M	Q2 2021 Incurred: \$11M
Variance: -\$83M (-2.2%)	Variance: -\$29M (-72.5%)

LTA	
Cumulative Planned: \$880M	Q2 2021 Planned: \$7M
Cumulative Incurred: \$868M	Q2 2021 Incurred: \$0M
Variance: -\$12M (-1.4%)	Variance: -\$7M (-100.0%)

- The planned expenditure by month was set in June of 2020.
- During Q2 2021, the variance of planned vs incurred cost is primarily due to lower use of LITL and LTA contingency, as well as lower than planned expenditure on Owners costs, synchronous condensers and converter station contracts.
- See Section 4.2 and Annex B for further detail.

Earned Progress: (As of December 2019)

- MFGen
 - >98.5 complete
- LITL
 - >99% complete
- LTA
 - Complete
- See Section 4.2 and Annex C for further detail.

Power Development¹

• Turbines and Generators

Unit	Status
1	 Unit 1 was turned back over to the Project in early July 2021. Welding rework and head cover modifications are ongoing Planning ongoing with Andritz and Operations for generator stator bar replacement with a tentative start in mid August
2	Currently operating. Planning ongoing with Andritz and Operations to complete remaining punch list items
3	 Grid synchronization was completed July 16, 2021 and first power achieved 72 hour trial run was completed on August 9, 2021 Documentation closeout and punch list clearance are underway in anticipation of release for service in mid August
4	 Static commissioning activities ongoing Due to delays on Unit 3 commissioning activities, release for service is now expected in October, 2021
-	

- Emera Arrangements
 - Delivery of the Nova Scotia block will commence by August 15, 2021
- The Muskrat Falls camp was closed on July 17, 2021 and all personnel are now being housed off site. Camp preservation activities are ongoing

¹ Some activities in this and the following Power Development slides have occurred since June 2021.

Activity	Remaining Scope	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Comments
Turbines and Generators	Unit 1 - Commissioning and Trial Operations Unit 1 - Commercial Power (Ready for Operation)							Ready for Operation Achieved - Dec 2020
	Unit 2 - Pre Commissioning Tests Unit 2 - Commissioning and Trial Operations Unit 2 - Commercial Power (Ready for Operation)				×			Ready for Operation Achieved - June 2021
	Unit 3 - Assembly and Installation Unit 3 - Pre Commissioning Tests Unit 3 - Commissioning and Trial Operations Unit 3 - Commercial Power (Ready for Operation)					*		Ready for Operation - mid August 2021
	Unit 4 - Assembly and Installation Unit 4 - Pre Commisioning Tests Unit 4 - Commissioning and Trial Operations Unit 4 - Commercial Power (Ready for Operation)						×	Ready for Operation - October 2021

Power Development Summary Schedule (CH0030)

- Balance of Plant
 - Cahill-Ganotec (CG) is completing balance of plant systems
 - Unit 4 electrical scope complete; final walk downs ongoing
 - Completion of architectural scope and punch list clearance ongoing
- <u>Hydro Mechanical</u>
 - Intake
 - Commissioning for intakes 1 through 4 is being completed in coordination with commissioning and start up activities for each unit
 - Condition of intake gate secondary concrete will be assessed as commissioning progresses
 - Post overspeed inspection on Unit 3 indicated no issues; Post trail run inspection is ongoing
- Arbitration with Astaldi continues; payment of Astaldi related liens against the project continues; Nalcor intends to recover any costs associated from Astaldi or the contract's securities. Hearings concluded in July 2020 with final decisions expected in late October, 2021. Other project residual contingency, funds are not held within the September 2020 budget should net damages be awarded in Astaldi's favour.
- Focus areas for Q3, 2021 include commissioning of unit 3, and completion of installation of unit 4. Forecast expenditure for Q3, 2021 is estimated at approximately \$72 Million.

- Power Supply ¹:
 - Valve Hall Beam Replacement
 - Pole 2 beam replacement was completed on July 23, 2021
 - Pole 2 has been reenergized and tested to confirm proper operation post beam replacement work
 - Pole 1 beam replacement was complete on August 8, 2021
 - Pole 1 will be reenergized on August 16, 2021 to test and confirm proper operation post beam replacement work
 - LITL Operation
 - LITL operated in monopole mode using Pole 2 from between July 28 to August 4 at power levels ranging from 45 MW to 125 mw with synchronous condensers 2 and 3 in operation supporting LITL power transfer
 - LITL was taken offline on August 4, 2021 to allow GE to complete punch list items in advance of Pole 1 beam replacement work commencing as well as to allow Power Supply to complete planned transmission line maintenance and ice storm repair work including upgrades as a result of the ice storm damage root cause investigation on the Labrador portion of LITL (August 5-16 and August 23-Septmber 5, 2021)
 - Maintenance and repair work includes replacement of dampers and armour rods, installation of air flow spoilers, secure turnbuckles, electrode arm repairs, installation of vibration monitors and adjustment of insulator suspension clamps
 - The LITL will be reenergized from August 16-22, 2021 to allow GE to conduct a series of Pole 1 and bipole tests and after completion of transmission line work on September 5, 2021, the LITL is planned to be re-energized for bipole dynamic commissioning

¹ Some activities in this and the following Power Supply slides have occurred since June 2021.

• Final Bipole Software

- GE is progressing through final bipole software testing stages slower than planned due to increased time required to resolve punches, mainly software bugs
- FST 2 was complete on August 2, 2021 however discovery of bugs during testing require assessment and resolution before progressing to FAT
- GE has advised that their planned FAT start date is August 16, 2021. FAT is scheduled to take 2 weeks to complete and GE is looking at ways to mitigate the delay by compressing the schedule.
- The July Independent Third Party (ITP) audit has been delayed until August 11, 2021, to allow GE additional time to resolve open punches. The ITP audit may result in a further schedule revision

FINAL BIPOLE SOFTWARE TESTING STAGES



• Bipole Software Schedule

GE Milestones	Sept 2020 AFE	GE Schedule
FAT Complete	May 31, 2021	August 30, 2021
Dynamic Commissioning Complete	August 26, 2021	September 30, 2021
Trial Operations: Start*	August 26, 2021	September 30, 2021

*Trial operations is complete after 30 consecutive days of power transfer without a system trip attributed to the HVdc system.

- Considering the advanced staged of software development and testing, LCP will not continue to present a separate schedule
- Following successful completion of trial operations at high power of the full function bipole, GE is granted a period of up to 6 months to allow for equipment burn in and resolve any known non-critical defects.

Synchronous Condensers

SC3	SC2	SC1
■Working with Power Supply on Turnover	 Working with Power Supply on Turnover 	 Dynamic commissioning started on August 4, 2021 The unit has been rotated at 900rpm Balancing of the unit is ongoing
Commissioning complete achieved on May 25, 2021	Commissioning Complete achieved June 24, 2021	Commissioning Complete: October 31, 2021

SC2 and SC3 are commissioned and have been in operation to support LIL power transfer

• LITL Summary Schedule (June 2021 IPS)

Activity	Remaining Scope	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Comments
	Beam Manufacturing Beam Replacement							Final Valve Hall Remediation August 2021
Transmission	LIL Bipole Commissioning (Full Function Software) LIL Bipole Trial Operations (Full Function Software)							Trial Opertions (Final) Nov 2021
	Dynamic Commissioning Sync Condenser (Unit 3) Dynamic Commissioning Sync Condenser (Unit 2) Dynamic Commissioning Sync Condenser (Unit 1)							3 Units Ready Oct 2021 (Elliptical Bearing Approach)

 The focus for Q3 2021 is on continued completions, commissioning and integration of operations; and the forecast expenditure is estimated at approximately \$78 Million.

4.2 Project Expenditures

	Project Revised	ect Revised Cumulative \$			Cumulative %		
June 2021 (\$000)	Budget September 2020	Plan	Incurred	Variance	Plan	Incurred	Variance
Description	А	В	С	С-В	D=B/A	E=C/A	E-D
NE-LCP Owners Team, Admin and EPCM Services	\$1,165,768	\$1,142,342	\$1,132,750	(\$9,592)	98.0%	97.2%	-0.8%
Feasibility Engineering	\$35,847	\$35,847	\$35,847	\$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	\$40,706	\$40,518	\$40,260	(\$258)	99.5%	98.9%	-0.6%
Aboriginal Affairs	\$52,301	\$51,964	\$52,122	\$158	99.4%	99.7%	0.3%
Procurement & Construction	\$8,703,799	\$8,688,036	\$8,555,397	(\$132,639)	99.8%	98.3%	-1.5%
Commercial & Legal	\$119,345	\$111,327	\$109,093	(\$2,234)	93.3%	91.4%	-1.9%
Contingency	\$59,205	\$0	\$0	\$0	0.0%	0.0%	0.0%
ΤΟΤΑΙ	\$10,176,970	\$10,070,034	\$9,925,469	(\$144,565)	98.9%	97.5%	-1.4%

June 2021 (\$000)	Project Revised Budget September 2020	Incurred Cumulative Costs June 2021	Project Final Forecast Cost June 2021	Variance PFC from Budget
Description	A	В	С	D=A-C
NE-LCP Owners Team, Admin and EPCM Services	\$1,165,768	\$1,132,750	\$1,162,443	\$3,325
Feasibility Engineering	\$35,847	\$35,847	\$35,847	\$0
Environmental & Regulatory Compliance	\$40,706	\$40,260	\$40,706	\$0
Aboriginal Affairs	\$52,301	\$52,122	\$52,301	\$0
Procurement & Construction	\$8,703,799	\$8,555,397	\$8,708,222	(\$4,423)
Commercial & Legal	\$119,345	\$109,093	\$119,731	(\$386)
Contingency	\$59,205	\$0	\$57,722	\$1,483
TOTAL	\$10,176,970	\$9,925,469	\$10,176,972	\$0

4.3 Contingency

June 2021 (\$000)	Project Revised Budget September 2020	Project Forecast Cost March 2021	Project Forecast Cost June 2021	Change from Previous Quarter	Variance PFC from Budget
	А	В	С	С - В	C - A
Total Project	\$59,205	\$59,911	\$57,722	\$2,189	(\$1,483)

4.4 Earned Progress (December 2019)

		December 2019 Cumulative %
Cumulative to end of December 2019	Weight Factor %	<u>Earned</u>
Sub-Project	А	С
Muskrat Falls Generation (MFGen)	46.3%	98.5%
Labrador Island Transmission Link (LITL)	43.9%	99.97%
Labrador Transmission Asset (LTA)	9.8%	100.0%
Muskrat Falls Project - Overall	100.0%	99.3%



Annex A

- I. Project Capital Budget
- II. Project Milestone Schedule

Columns in tables may not total due to rounding

I. Project Capital Budget

Muskrat Falls Generating Facility (in \$ thousands)	September 2020
Expenditure Category	
NE-LCP Owners Team, Admin and EPCM Services	\$634,838
Feasibility Engineering	\$16,865
Environmental & Regulatory Compliance	\$28,230
Aboriginal Affairs	\$51,508
Procurement & Construction	\$4,703,316
Commercial & Legal	\$80,978
Contingency	\$44,240
Muskrat Falls Generation Total	\$5,559,974
Labrador-Island Transmission Link (in \$ thousands)	September 2020
Expenditure Category	
NE-LCP Owners Team, Admin and EPCM Services	\$397,56
Feasibility Engineering	\$18,679
Environmental & Regulatory Compliance	\$11,664
Aboriginal Affairs	\$625
Procurement & Construction	\$3,266,059
Commercial & Legal	\$29,350
Contingency	\$13,54
Labrador-Island Transmission Link Total	\$3,737,48
Labrador-Transmission Assets (in \$ thousands)	September 2020
Expenditure Category	
NE-LCP Owners Team, Admin and EPCM Services	\$133,365
Feasibility Engineering	\$303
Environmental & Regulatory Compliance	\$812
Aboriginal Affairs	\$168
Procurement & Construction	\$734,424
Commercial & Legal	\$9,01
Contingency	\$1,419
Labrador Transmission Assets Total	\$879,508
Muskrat Falls Capital Cost Budget Total	\$10,176,970

Contingency Budget (in \$ thousands)	September 2020
Sub-Project:	
Muskrat Falls Generating Facility	\$44,240
Labrador-Island Transmission Link	\$13,546
Labrador Transmission Assets	\$1,419
Total Project	\$59,205

II. Project Milestone Schedule

Muskrat Falls	Sep 2020
Generating Facility	Planned Dates
North Spur Works Ready	
for Diversion	Oct-16
River Diversion Complete	Feb-17
Reservoir Impoundment	
Complete	Sep-19
Powerhouse Unit 1	
Commissioned - Ready for	
Operation	Oct-20
First Power from Muskrat	
Falls	Sep-20
Powerhouse Unit 2	
Commissioned - Ready for	
Operation	Dec-20
Powerhouse Unit 3	
Commissioned - Ready for	
Operation	May-21
Powerhouse Unit 4	
Commissioned - Ready for	
Operation	Sep-21
Full Power from Muskrat	
Falls	Sep-21
Commissioning Complete	
- Commissioning	
Certificate Issued	Oct-21

Labrador-Island	Sep 2020
Transmission Link	Planned Dates
SOBI Cable Systems Ready	Dec-16
Soldiers Pond Switchyard	
Ready to Energize	Aug-17
Ready for Power	
Transmission (LTA)	Apr-18
Muskrat Falls Converter	
Station Ready to Energize	
(Pole 1)	May-18
HVdc Transmission Line	
Construction Complete	Nov-17
Soldier's Pond Converter	
Station Ready to Energize	
(Pole 1)	May-18
1ST Power Transfer (Pole 1)	Jun-18
Soldiers Pond Synchronous	
Condenser Ready for	
Operation	Aug-21
Ready for Power	
Transmission (Low Load	
Testing Complete Pole 1)	Jun-19
Muskrat Falls and Soldiers	
Pond Converter Stations -	
Bipole Dynamic Testing	
Complete	Sep-21
Commissioning Complete -	
Commissioning Certificate	
Issued	Oct-21

Labrador Transmission Assets	Sep 2020 Planned Dates
HVac Transmission	
Complete	Jun-17
Churchill Falls	
Switchyard Ready	
to Energize	Feb-18
Muskrat Falls	
Switchyard Ready	
to Energize	Apr-18
Ready for Power	
Transmission	Apr-18
Commissioning	
Complete -	
Commissioning	
Certificate Issued	Oct-21

Date Certain - Nov-2021



Annex B

Project Expenditures

- I. Muskrat Falls Generation
- II. Labrador Island Transmission Link
- III. Labrador Transmission Assets

Columns in tables may not total due to rounding

I. Muskrat Falls Generation

	Project Revised		Cumulative \$			Cumulative %		
June 2021 (\$000)	Budget September 2020	Planned	Incurred	Variance	Planned	Incurred	Variance	
Description	А	В	С	C-B	D=B/A	E=C/A	E-D	
NE-LCP Owners Team, Admin and EPCM Services	\$634,838	\$622,831	\$619 <i>,</i> 337	(\$3,494)	98.1%	97.6%	-0.6%	
Feasibility Engineering	\$16,865	\$16,865	\$16,865	\$0	100.0%	100.0%	0.0%	
Environmental & Regulatory Compliance	\$28,230	\$28,067	\$28,017	(\$50)	99.4%	99.2%	-0.2%	
Aboriginal Affairs	\$51,508	\$51,191	\$51,412	\$221	99.4%	99.8%	0.4%	
Procurement & Construction	\$4,703,316	\$4,688,023	\$4,642,371	(\$45,652)	99.7%	98.7%	-1.0%	
Commercial & Legal	\$80,978	\$74,401	\$73,552	(\$849)	91.9%	90.8%	-1.0%	
Contingency	\$44,240	\$0	\$0	\$0	0.0%	0.0%	0.0%	
TOTAL	\$5,559,974	\$5,481,377	\$5,431,553	(\$49,824)	98.6%	97.7%	-0.9%	

June 2021 (\$000)	Project Revised Budget September 2020	Incurred Cumulative Costs June 2021
Description	A	В
NE-LCP Owners Team, Admin and EPCM Services	\$634,838	\$619,337
Feasibility Engineering	\$16,865	\$16,865
Environmental & Regulatory Compliance	\$28,230	\$28,017
Aboriginal Affairs	\$51,508	\$51,412
Procurement & Construction	\$4,703,316	\$4,642,371
Commercial & Legal	\$80,978	\$73,552
Contingency	\$44,240	\$0
TOTAL	\$5,559,974	\$5,431,553

II. Labrador Island Transmission Link

	Project Revised		Cumulative \$	Cumulative %			%
June 2021 (\$000)	Budget September 2020	Plan	Incurred	Variance	Plan	Incurred	Variance
Description	А	В	С	С-В	D=B/A	E=C/A	E-D
NE-LCP Owners Team, Admin and EPCM Services	\$397,565	\$386,146	\$381,988	(\$4,158)	97.1%	96.1%	-1.0%
Feasibility Engineering	\$18,679	\$18,679	\$18,679	\$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	\$11,664	\$11,639	\$11,571	(\$68)	99.8%	99.2%	-0.6%
Aboriginal Affairs	\$625	\$605	\$542	(\$63)	96.8%	86.7%	-10.1%
Procurement & Construction	\$3,266,059	\$3,264,170	\$3,185,827	(\$78,343)	99.9%	97.5%	-2.4%
Commercial & Legal	\$29,350	\$27,909	\$27,658	(\$251)	95.1%	94.2%	-0.9%
Contingency	\$13,546	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$3,737,488	\$3,709,147	\$3,626,265	(\$82,882)	99.2%	97.0%	-2.2%

June 2021 (\$000)	Project Revised Budget September 2020	Incurred Costs Cumulative June 2021
Description	А	В
NE-LCP Owners Team, Admin and EPCM Services	\$397,565	\$381,988
Feasibility Engineering	\$18,679	\$18,679
Environmental & Regulatory Compliance	\$11,664	\$11,571
Aboriginal Affairs	\$625	\$542
Procurement & Construction	\$3,266,059	\$3,185,827
Commercial & Legal	\$29,350	\$27,658
Contingency	\$13,546	\$0
τοται	\$3,737,488	\$3,626,265

III. Labrador Transmission Assets

	Project Revised Cumulative \$			Cumulative %			
June 2021 (\$000)	Budget September 2020	Plan	Incurred	Variance	Plan	Incurred	Variance
Description	А	В	С	C-B	D=B/A	E=C/A	E-D
NE-LCP Owners Team, Admin and EPCM Services	\$133,365	\$133,365	\$131,425	(\$1,940)	100.0%	98.5%	-1.5%
Feasibility Engineering	\$303	\$303	\$303	\$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	\$812	\$812	\$672	(\$140)	100.0%	82.8%	-17.2%
Aboriginal Affairs	\$168	\$168	\$168	\$0	100.0%	100.0%	0.0%
Procurement & Construction	\$734,424	\$735,843	\$727,199	(\$8,644)	100.2%	99.0%	-1.2%
Commercial & Legal	\$9,017	\$9,017	\$7 <i>,</i> 883	(\$1,134)	100.0%	87.4%	-12.6%
Contingency	\$1,419	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$879,508	\$879,508	\$867,650	(\$11,858)	100.0%	98.7%	-1.3%

	Project Revised	Incurred Costs
June 2021 (\$000)	September 2020	Cumulative June 2021
Description	A	В
NE-LCP Owners Team, Admin and EPCM Services	\$133,365	\$131,425
Feasibility Engineering	\$303	\$303
Environmental & Regulatory Compliance	\$812	\$672
Aboriginal Affairs	\$168	\$168
Procurement & Construction	\$734,424	\$727,199
Commercial & Legal	\$9,017	\$7,883
Contingency	\$1,419	\$0
τοται	\$879,508	\$867,650



Annex C

Earned Progress

- I. Overall Construction
- II. Muskrat Falls Generation
- III. Labrador Island Transmission Link
- IV. Labrador Transmission Assets

Columns in tables may not total due to rounding

I. Overall Construction (December 2019)

• >99.3% complete

II. Muskrat Falls Generation (December 2019)

• >98.5% complete

III. Labrador Island Transmission Link (December 2019)

• >99.97% complete

IV. Labrador Transmission Assets (December 2019)

• 100% complete



Annex D

Project Milestone Schedule Forecast

- I. Muskrat Falls Generation
- II. Labrador Island Transmission Link
- III. Labrador Transmission Assets

I. Muskrat Falls Generation

	Planned Date September 2020	June 2021 Actual/Eorecast
June 2021		Actual/1 Orecast
Project Sanction	17-Dec-12	Complete
North Spur Works Ready for Diversion	5-Oct-16	Complete
River Diversion Complete	15-Feb-17	Complete
Reservoir Impoundment Complete	4-Sep-19	Complete
Powerhouse Unit 1 Commissioned - Ready for Operation	31-Oct-20	Complete - 22-Dec-20
First Power from Muskrat Falls	22-Sep-20	Complete
Powerhouse Unit 2 Commissioned - Ready for Operation	31-Dec-20	Complete - 12-Jun-21
Powerhouse Unit 3 Commissioned - Ready for Operation	31-May-21	30-July-21
Powerhouse Unit 4 Commissioned - Ready for Operation	30-Sep-21	30-Sep-21
Full Power from Muskrat Falls	30-Sep-21	30-Sep-21
Commissioning Complete - Commissioning Certificate Issued	1-Oct-21	27-Nov-21*
Date Certain	November 2021	November 2021

* Updated forecast from last reporting period

II. Labrador Island Transmission Link

	Planned Date	June 2021
June 2021	September 2020	Actual/forecast
Project Sanction	17-Dec-12	Complete
SOBI Cable Systems Ready	9-Dec-16	Complete
Soldiers Pond Switchyard Ready to Energize	24-Aug-17	Complete
Ready for Power Transmission (LTA)	27-Apr-18	Complete
Muskrat Falls Converter Station Ready to Energize (Pole 1)	10-May-18	Complete
HVdc Transmission Line Construction Complete	27-Nov-17	Complete
Soldier's Pond Converter Station Ready to Energize (Pole 1)	16-May-18	Complete
		Completion of 45
1ST Power Transfer (Pole 1)	11-Jun-18	megawatt heat run
Soldiers Pond Synchronous Condenser Ready for Operation	31-Aug-21	31-October-21*
Ready for Power Transmission (Low Load Testing Complete Pole 1)	4-Jun-19	Complete
Muskrat Falls and Soldiers Pond Converter Stations - Bipole Dynamic Testing		
Complete	30-Sep-21	26-Nov-21*
Commissioning Complete - Commissioning Certificate Issued	1-0ct-21	27-Nov-21*
Date Certain	November 2021	November 2021

* Updated forecast from last reporting period

III. Labrador Transmission Assets

June 2021	September 2020 Planned Date	June 2021 Actual/Forecast
Project Sanction	17-Dec-12	Complete
HVac Transmission Line Construction Complete	27-Jun-17	Complete: Turnover of HVac TL and all subsystems complete
Churchill Falls Switchyard Ready to Energize	14-Feb-18	Complete
Muskrat Falls Switchyard Ready to Energize	2-Apr-18	Complete
Ready for Power Transmission	27-Apr-18	Complete
Commissioning Complete - Commissioning Certificate Issued	1-Oct-21	27-Nov-21*
Date Certain	November 2021	November 2021

* Updated forecast from last reporting period



End of Report