Muskrat Falls Project Oversight Committee

Quarterly Project Update

Period Ending December 2020

April 30, 2021

Table of Contents

1. Q4 2020 Cumulative Costs

2. Q4 2020 Planned and Incurred Costs and 2020 Incurred Costs

3. Oversight Committee Reporting

4. Nalcor Reporting

Annex A - Project Capital Budget and Project Milestone Schedule

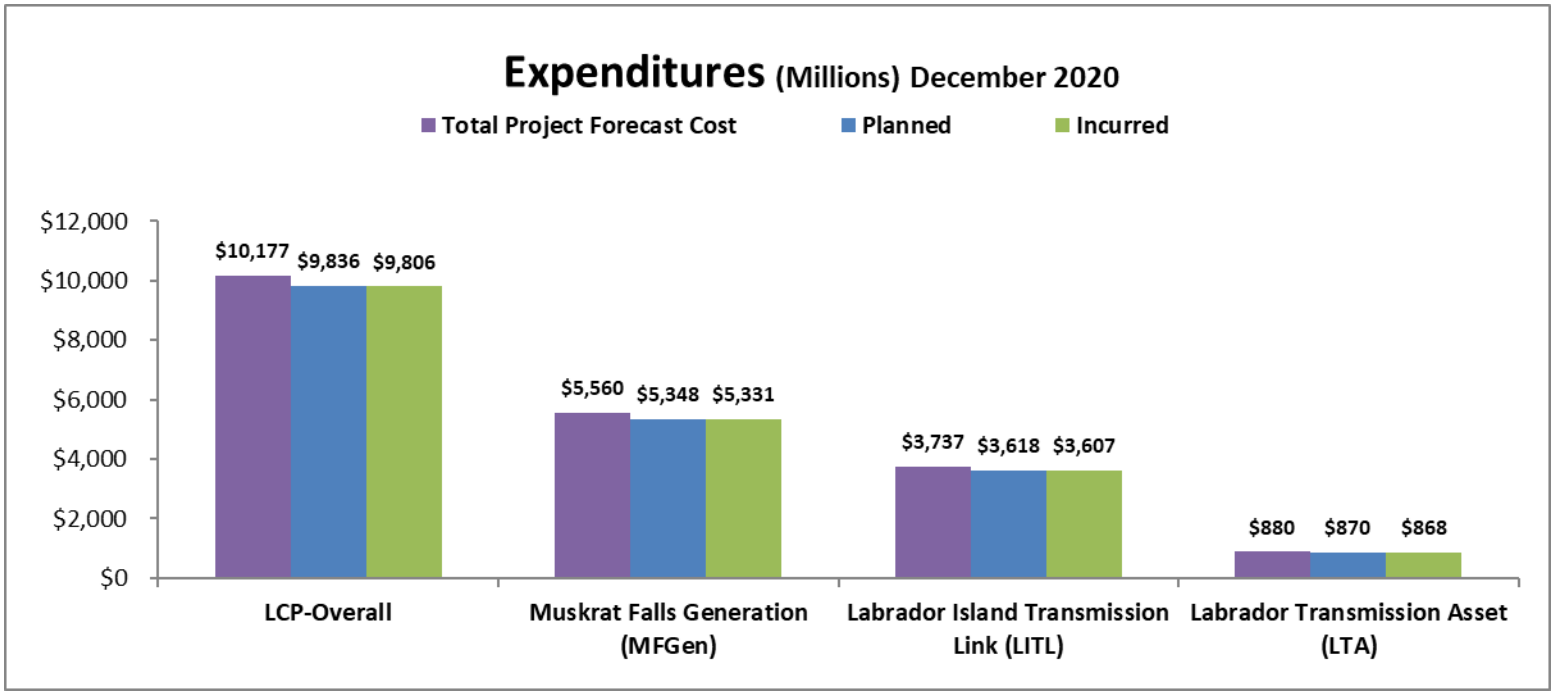
Annex B - Project Expenditures

Annex C - Earned Progress

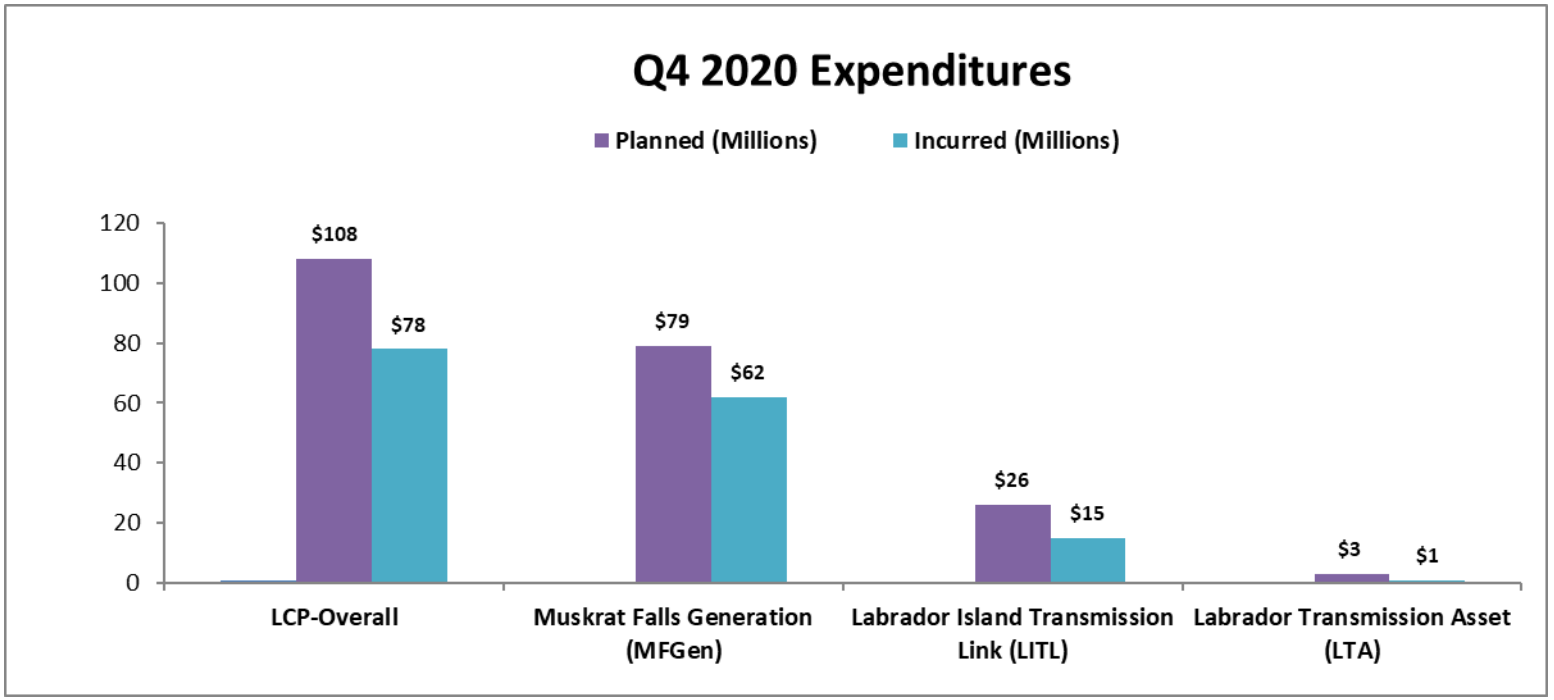
Annex D - Project Milestone Schedule Forecast

- Tables and figures may not total due to rounding

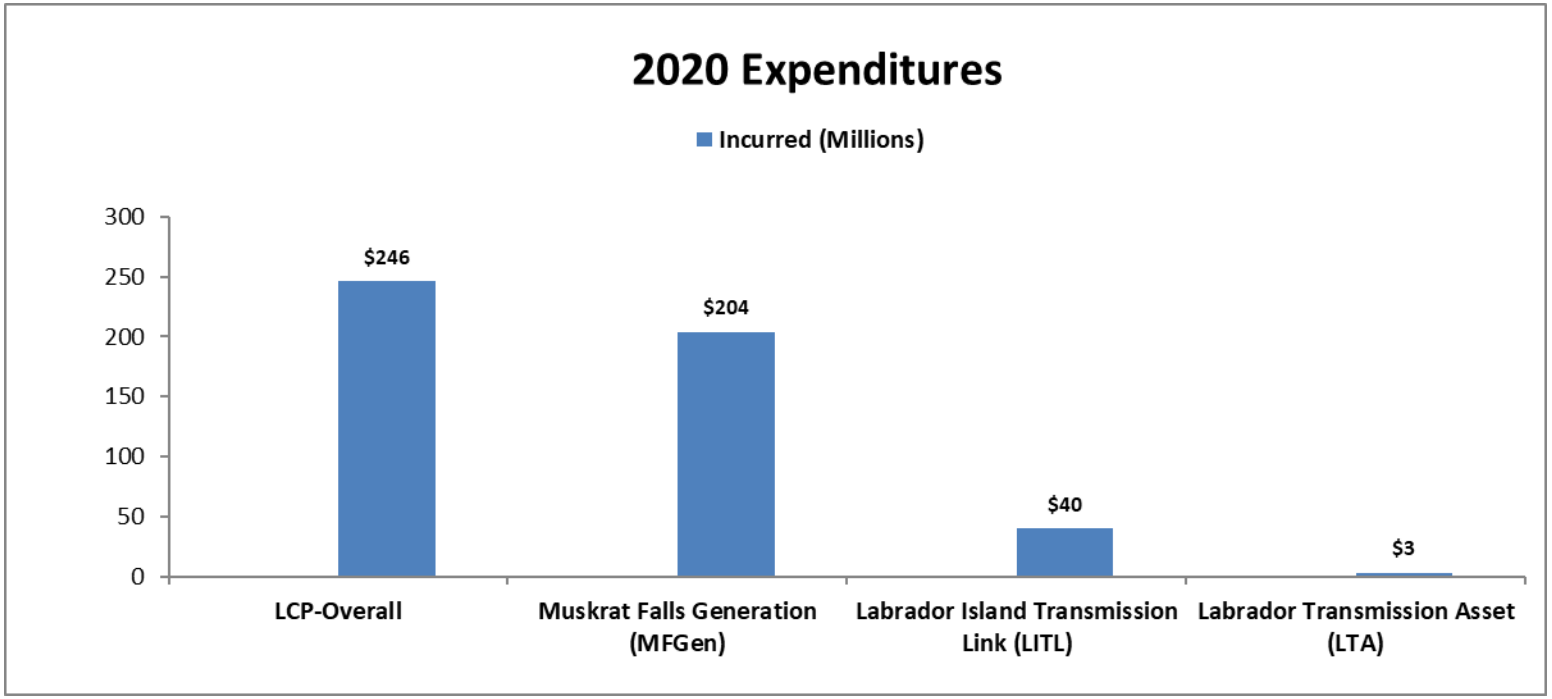
1. Q4 2020 Cumulative Costs



2. Q4 2020 Planed and Incurred Costs



2. 2020 Incurred Costs



3.0 Oversight Committee Reporting

3.1 Overview
3.2 Committee Activities
3.3 Independent Engineer Activities
3.4 Risks and Issues Being Monitored by the Committee
3.5 Subsequent Events to Q4 and Other Notable Activity

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 October to December 2020 reporting period (Q4).
- 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 Q4 reporting period ending, and up to the date of drafting this report (April 11, 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 December 2020 which includes project activity updates to late January 2021.
- The Annexes contain a more detailed accounting of the information provided in this report.
- The next Committee Report will cover the reporting period January 2021 - March 2021.

3.2 Committee Activities

- The Committee met on three 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 @ Click here and Click here.
- 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 three calls with the IE and NRCan.
- The Committee Chair and IET Director participated in three calls with Nalcor Transition to Operations (TTO) officials to receive project updates.
- Planned visits to project sites continued to be placed on hold due to COVID-19 pandemic travel and physical distancing restrictions.
- The Committee Chair participated in virtual site visits with NRCan and the IE of the Soldiers Pond converter station and Muskrat Falls generation station.

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.

3.4 Risk and Issues being Monitored by the Committee

- 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 and protection and controls (P&C) software completion for the HVdc system remains a key project risk;
  - LITL bipole commissioning and final software schedule delivery risk remains high;
  - A decision is pending on approach for synchronous condenser vibration remediation;
  - A design issue has been identified with powerhouse unit 2 inner and intermediate head covers bolts that require remediation along with other units which will impact schedule,
  - Litigation and arbitration proceedings continue with Astaldi;
  - Reservoir rim monitoring has been transferred to Power Supply Operations; and
  - Nalcor/NLH preparedness for interconnection and operations following transfer of power and final completion of bipole remains a key focus area.

3.4 Risk and Issues being Monitored by the Committee

- 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.

3.4 Risk and Issues being Monitored by the Committee

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;
- Valve hall remediation; and
- P&C software delivery and final commissioning completion to meet project schedule.

D) Astaldi

- Astaldi arbitration/litigation outcomes and potential impact on project costs.

E) Synchronous Condensers

- Remediation of vibration and other commissioning issues; and potential impact on project schedule.

3.4 Risk and Issues being Monitored by the Committee

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 1 through 4 and project schedule.

H) Reservoir Rim Stability

- Impact of reservoir full supply level on reservoir shoreline/slope stability - Monitoring transferred to Power Supply Operations.

I) 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.

3.4 Risk and Issues being Monitored by the Committee

J) Additional Risks (above the September 2020 Project Budget)

- Second wave of COVID-19 cost and schedule impacts;
- Astaldi arbitration/litigation; and
- Alternate HVdc P&C software development;
- 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.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

- In January, February, March, and April 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.
- As of the end of March 2021, the current forecast for project commissioning complete is November 15, 2021.
- In early March 2021, Power Supply advised:
    - On February 13, 2021 a declaration of Force Majeure was issued for Soldiers Pond contractors for a period of up to two weeks in response to the February 12, 2021 Chief Medial Officer announcement that the province had moved to Alert Level 5 due to COVID-19 case numbers. Force Majeure was ended on February 17, 2021 for the Soldiers Pond site.
    - After initial discovery of damage on the Labrador electrode line one on January 11, 2021, addition damage was observed on electrode line 1 and electrode line 2, as well as pole 2 in the following weeks. In total 36 electrode line conductor spans required splicing, repair or restring as well as 11 cross arms that required replacement. Repairs were completed on February 25, 2021. A draft root cause analysis (RCA) has been prepared.
    - On February 3, 2021, a pole 2 conductor section on the Labrador Transmission Line near Forteau fell to the ground. Cause of the failure was identified as a failed eyebolt. A second pole 2 eyebolt on a dead end tower in the same vicinity was also identified to have a similar failure. Repairs were completed on February 18, 2021 and a RCA is underway.
    - Interim bipole dynamic commissioning tests restarted on February 24, 2021 and trial operations are expected to commence on March 11, 2021.
    - Nalcor has received a preliminary plan for final valve hall remediation; an updated plan is expected in March 2021 based on beam manufacturing status. GE Grid's current schedule for beam manufacturing is March and April 2021 for poles 1 and 2 respectively.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

- Independent Third Party (ITP) report on final bipole software progress confirms that that GE Grid's forecasted milestone dates have slipped by approximately one month.

Bipole Software Schedule as end of February 2021

Interim Bipole Software		
GE Milestones	**GE Current Schedule**	**LCP Current Schedule**
Interim Software to Site	October 29, 2020	October 29, 2020
Dynamic Commissioning: Complete	March 10, 2021	March 10, 2021
Trial Operations at Low Load Start	March 11, 2021*	March 11, 2021*
Final Bipole Software		
Final Software to Site	June 22, 2021	June 22, 2021
Dynamic Commissioning: Complete	July 27, 2021	August 22, 2021
Trial Operations (at available power)	July 27, 2021*	August 23, 2021*

*Trial operations is complete after 30 consecutive days of power transfer without a system trip

- A February 2021 ITP report is pending, however GE Grid has advised Nalcor that the FAT complete date will slip towards the end of July 2021. Following Nalcor review of the February IPT report a schedule forecast update is expected.
- GE Power has been notified by Nalcor that they can proceed with elliptical bearing modifications for Soldiers Pond synchronous condenser lateral vibration remediation as per GE Power's recommendation. Synchronous condenser schedule will be revised once receive from GE Power.
- Project commissioning complete (at available power) now moved from October 1, 2021 to October 22, 2021.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

- In early March 2021, Power Development advised:
  - In response to the February 12, 2021 Chief Medial Officer announcement that the province had moved to Alert Level 5 due to COVID-19 case numbers various modified measures were put in place to allow for a continuation while protecting workers and local communities including:
    - Extended worker turnarounds, new quarantine requirements and additional COVID-19 testing for workers on the Muskrat Falls site.
  - On February 27, 2021 LCP implemented a temporary extended rotation for workers at the Muskrat Falls site. This temporary extended rotation was one week quarantine prior to entrance of workers follow by three weeks of work on site. During this period work focused on activities that advance progress on units 2 and 3 until the COVID-19 risk diminishes.
  - <u>Turbines and Generators</u>
    - While implementing modification to the bolting arrangement between turbine and inner and intermediate head covers on unit 2, Andritz identified weld defects on the head cover stiffener plates. These welds require rework and a repair plan has been developed to rectify the stiffener plate welds.
    - Andritz is undertaking analysis to confirm whether other welds may require inspection and rework.
    - The head cover joint modification and weld inspection rectification will be undertaken on units 1, 3 and 4. Unit 1 rework will be scheduled during a planned outage. Rework for units 3 and 4 will be completed prior to commissioning.
  - Due to commission delays noted above on unit 2, the schedule for units 2 and 3 has moved from March and May 2021 to April and June 2021 respectively. Unit 4 schedule is unchanged at this time but is risked.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

- In early April 2021, Power Supply advised:
  - Interim Bipole operations commenced on March 19, 2021.
  - A pole trip on the LITL within the first 24 hours of reenergization occurred which resulted in an automatic switch to monopole operation. Bipole operation recommenced approximately one hour later. The pole trip is under review.
  - On April 1 during a power ramp down to perform a system test the LITL tripped but was back running the same day. The cause of the trip is under investigation. The status of the 30 day trial operation period will be determined once the investigation is complete. Trial operations has continued since this time without incident (April 1, 2021).
  - GE Grid has advised Nalcor that manufacturing of beams for valve hall beams for final valve hall remediation has been delayed. Early indications from GE Grid's contractor is that all beams will be manufactured by end of July. Previous March 1, 2021 schedule forecast was for all beams to be manufactured by end of April 2021.
  - The final bipole software schedule has been updated by Nalcor based on ITP reports to reflect GE Grid's current schedule which has slipped by approximately five weeks since last reporting period.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

Bipole Software Schedule as end of March 2021

Interim Bipole Software		
GE Milestones	**GE Current Schedule**	**LCP Current Schedule**
Interim Software to Site	October 29, 2020	October 29, 2020
Dynamic Commissioning: Complete	March 10, 2021	March 10, 2021
Trial Operations: Start (Low Load)	March 19, 2021	March 19, 2021
Trial Operations: Complete* (Low Load)	April 19, 2021	May 25, 2021
Final Bipole Software		
Final Software to Site	July 29, 2021	July, 29 2021
Dynamic Commissioning: Complete	September 7, 2021	September 14, 2021
Trial Operations: Start (at available power)	September 7, 2021	September 15, 2021
Trial Operations: Complete** (at available power)	December 9, 2021	November 14, 2021

Trial operations is complete after 30 consecutive days of power transfer without a system trip.
*LCP has an allowance of 77 days to complete Interim Bipole Trial Operations. GE Grid has included 30 days in their schedule to complete Trial Operations.
**LCP has an allowance of 60 days to complete Final Bipole Trial Operations. GE Grid has included 90 days in their schedule to complete Trial Operations, as per their contractual requirements.

Revised Synchronous Condenser Schedule (with elliptical bearing remediation)

Unit 3 = May15, 2021 Unit 2 = July 25 2021, Unit 1 = September 24, 2021

- Project commissioning complete (at available power) now moved from October 22, 2021 to November 15, 2021.

3.5 Subsequent Events to Q4 2020 and Other Notable Activity

- In early April 2021, Power Development advised:
  - With the province moving back to COVID-19 Alert Level 2, operations at the Muskrat Falls site have been transitioning back to pre-outbreak conditions.
  - <u>Turbines and Generators</u>

Unit	Status
1	• Unit is now back in service; Unit was out of service to from March 15 to March 25 to address critical welds on the discharge ring; Monthly headcover/ weld inspections are being made • A planned outage will be taken to replace the generator stator bar; headcover modification and welding rework at a time to be determined
2	• Preparing for resumption of overspeed testing; Fitted studs/bolts have been drilled and fitted and require torqueing • Welding work necessary for overspeed testing has been completed; All welding rework on unit 2 will be completed prior to release for service • Release for service forecasted for May 2021
3	• Dry commissioning is ongoing • Fitted stud installation to take place after design is confirmed with unit 2 overspeed testing • Welding rework underway in parallel with commissioning checks • Release for service expected in July 2021
4	• Installation ongoing • Alignment and oil flushing underway • Fitted stud modification to take place after design confirmation with unit 2 overspeed testing installation/assembly approximately 80% complete (end of March 2021) • Release for service expected in September 2021

- Schedule risk remains depending on the extent of weld rectification required after inspections are completed on each of the units.

4.0 Nalcor Reporting

4.1 Summary - Quarter Ending December 2020
4.2 Project Expenditures
4.3 Contingency
4.4 Earned Progress

*Information in this section was provided for period ending December 2020 project reporting which includes project activity updates to late January 2020. Recent updates to this section can be found in Section 3.5.

4.1 Summary – Quarter Ending December 2020

December 2020 Summary:

- Overall construction progress is at 99.3% (December 2019);
- $9,806 Million in incurred costs; and
- $9,872 Million in committed costs.

- As of December 2020, 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 and construction budget.
- Does not include Additional Risks as reported on slide 14, which at the end of December 2020, known risks totaled approximately $700 Million. If these risks are realized, they may become project costs.
- The current forecast contingency budget at December 2020 is $56.3 Million, a decrease of $2.8 Million from the previous Quarter.
- For further detail see Section 4.3.

4.1 Summary – Quarter Ending December 2020

Quarterly Planned vs Incurred Cost Variances:

MFGen	
Cumulative Planned: $5,348M	Q4 2020 Planned: $79M
Cumulative Incurred: $5,331M	Q4 2020 Incurred: $62M
Variance: -$17M (-0.3%)	Variance: -$17M (-21.5%)

- Planned expenditure by month was set in September 2020.
- During Q4 2020, the variance in planned vs. incurred cost is primarily due to lower use of contingency, as well as lower than planned expenditure on the Muskrat Falls site Services and Owners costs.
- See Section 4.2 and Annex B for further detail.

4.1 Summary – Quarter Ending December 2020

Quarterly Planned vs Incurred Cost Variances:

LITL	
Cumulative Planned: $3,618M	Q4 2020 Planned: $26M
Cumulative Incurred: $3,607M	Q4 2020 Incurred: $15M
Variance: -$11M (-0.3%)	Variance: -$11M (-42.3%)

LTA	
Cumulative Planned: $870M	Q4 2020 Planned: $3M
Cumulative Incurred: $868M	Q4 2020 Incurred: $1M
Variance: -$2M (-0.3%)	Variance: -$2M (-66.7%)

- The planned expenditure by month was set in June of 2020.
- During Q4 2020, the variance of planned vs incurred cost is primarily due to lower use of the LITL and LTA contingency, as well as lower than planned expenditure on Owners costs, remediation of transmission line access roads, synchronous condensers and converter station contracts.
- See Section 4.2 and Annex B for further detail.

4.1 Summary – Quarter Ending December 2020

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.

4.1 Summary – Quarter Ending December 2020

Power Development[1]

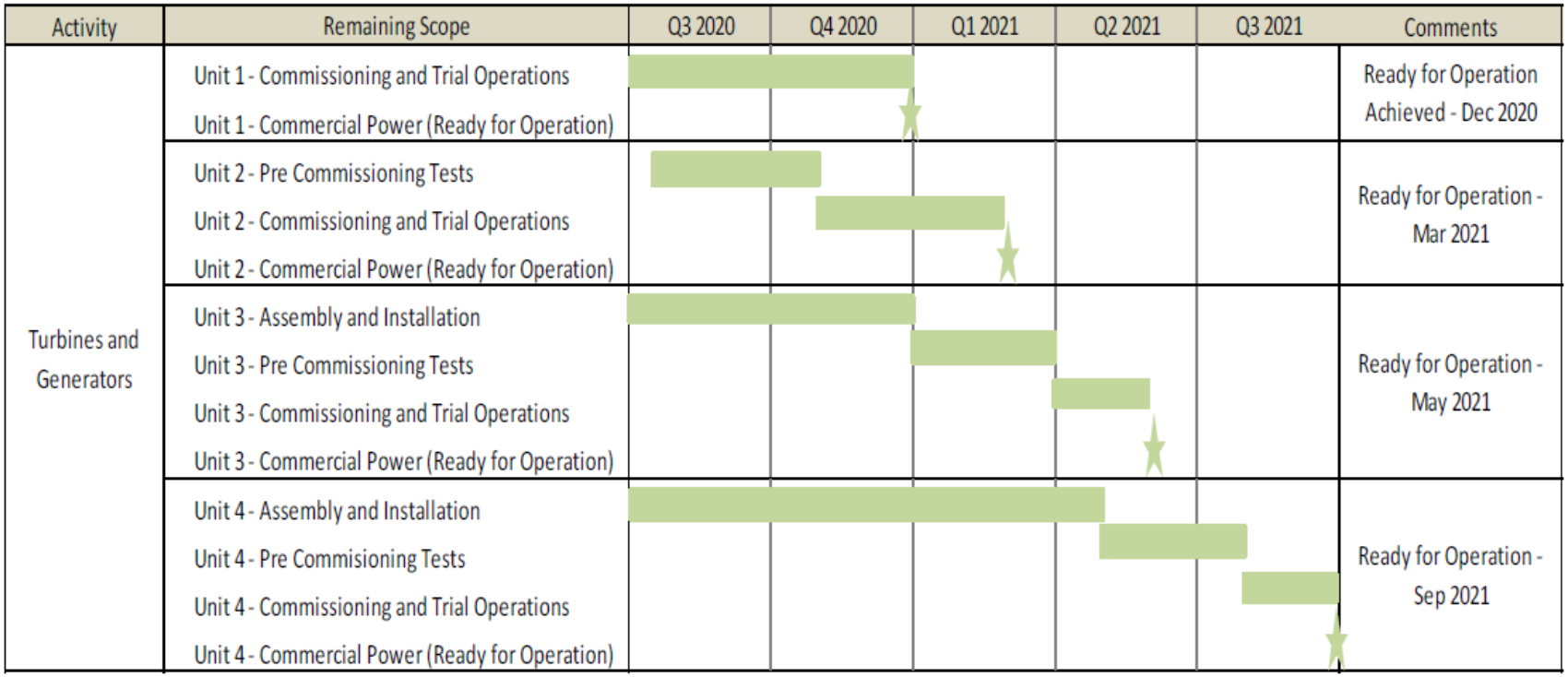
- Turbines and Generators

Unit	Status
1	• In service December 22, 2020
2	• Andritz has identified a design issue with bolts between inner and intermediate head covers • Bolts are subjected to excessive radial loading during overspeed conditions • Andritz engineering has developed solution including redesigned bolts and series of dowels between the covers • Replacement parts are onsite and modifications are underway; expected to be to be completed by mid-February; followed by resumption of mechanical commissioning • Units 1, 3, and 4 will require the same modifications • Monthly inspections on unit 1 is recommended until modifications are completed • Risk that in service for units 2 and 3 could move into following month; better precision will be known by end of February
3	• Assembly is near completion; installation/assembly approximately 94% (January 31, 2021) • Commission delay on unit 2 and COVID-19 self isolation for Andritz is creating schedule risk for unit 3 in service date
4	• Rotor pole installation ongoing; installation/assembly approximately 75% complete (January 31, 2021) • Commercial power expected in September 2021

[1] Some activities in this and the following Power Development slides have occurred since December 2020.

4.1 Summary – Quarter Ending December 2020

Power Development Summary Schedule (CH0030)



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

4.1 Summary – Quarter Ending December 2020

- Balance of Plant
  - Cahill-Ganotec (CG) is completing balance of plant systems; currently at approximately 95% complete.
  - Unit 3 - electrical walk downs and completions
  - Unit 4 – transferring scope
  - Punchlist clearance

  - Currently CG is continuing to work on the following systems:
    - HVAC priority systems commissioning
    - HVAC heating systems for north, central and south dams
    - HVAC and fire water seismic restraints
    - Temporary and permanent heating solutions
    - Fireproofing and cement board installation
    - Hatch cover for oil water separator
    - Fire caulking and painting doors

  - Vendor representatives are on site, and progressing commissioning of priority systems.

4.1 Summary – Quarter Ending December 2020

- Hydro-Mechanical
  - Intake
    - Commissioning for intakes 1 through 4 is being completed in coordination with commissioning and start up activities for each unit.

- 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; witness examination will occur in November 2020. 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 Q1, 2021 include commissioning of units 1 and 2. Forecast expenditure for Q1, 2021 is estimated at approximately $65.5 Million.

4.1 Summary – Quarter Ending December 2020

Power Supply [1]:

- Key January Highlights
  - Continued dynamic commissioning and operation of the LITL with interim bipole software
    - At end of 2020 a total of 38.3 GWh of electricity had been transferred over the LITL
    - YTD 2021, approximately 63.4 GWH transferred
  - Dynamic commissioning tests for pole 1 and 2 are complete; bipole testing commenced February 1, 2021
  - Preliminary schedule and plan for final valve hall remediation work has been received
  - December 2020 Independent Third Party (ITP) report on final bipole software progress suggests potential for schedule slippage. The project team is awaiting a January ITP report to determine if an update to schedule forecast is required
  - Damage to the electrode line in Southern Labrador has occurred following a severe ice storm. Repairs to eight cross arms and one section of broken electrode line conductor and multiple areas of damaged electrode line conductor are underway. Repairs are expected to completed by mid-February and a Root Cause Analysis (RCA) has commenced

[1] Some activities in this and the following Power Supply slides have occurred since December 2020.

4.1 Summary – Quarter Ending December 2020

- Interim Bipole Commissioning
  - Electrode line damage has added several days to dynamic commissioning schedule due to pause in testing when the LITL is offline for repair work
  - Commissioning tests have been moved to night shift to mitigate impact of LITL downtime for repairs
  - Heat run tests up to 225 MW for pole 1 and 2 have been completed
  - Bipole dynamic commissioning has commenced and is expected to take approximately 3 weeks to complete

- Valve Hall Remediation Final Plan
  - Replacement prototype beam has been designed and manufactured and is currently being tested in GE Grid's facility in Stafford, UK.
  - Ge Grid's current manufacturing schedule is to have beams for pole 1 completed by end of March 2021 and pole 2 by April 2021
  - Preliminary plan for final valve hall remediation has been received from GE Grid; it is expected that the plan will be finalized by end of February 2021

4.1 Summary – Quarter Ending December 2020

- Final Bipole Software
  - December 2020 ITP report indicates that GE Grid, with out mitigation, is approximately 3 weeks behind schedule; January ITP report will be received first week of February; Schedule may need to be updated based on the January report; Risk for schedule slippage is very high.
  - GE Grid has adjusted its interim bipole schedule due to the pause in dynamic commission as a result of the electrode line damage.

Bipole Software Schedule

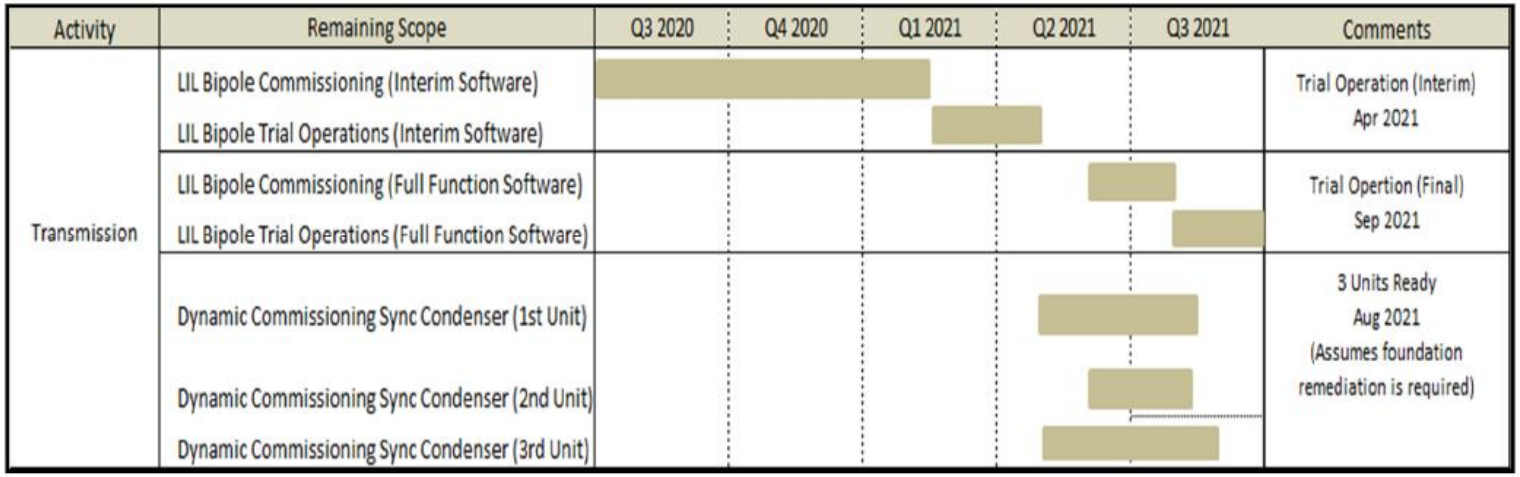
Interim Bipole Software		
GE Milestones	**GE Current Schedule**	**LCP Current Schedule**
Interim Software to Site	October 29, 2020	October 29, 2020
Dynamic Commissioning: Complete	February 20, 2021	February 20, 2021
Trial Operations at Low Load Start	February 21, 2021*	February 21, 2021*
Final Bipole Software		
Final Software to Site	May 20, 2021	May 31, 2021
Dynamic Commissioning: Complete	June 28, 2021	July 31, 2021
Trial Operations (at available power)	June 29, 2021*	August 1, 2021*

*Trial operations is complete after 30 consecutive days of power transfer without a system trip

4.1 Summary – Quarter Ending December 2020

- Synchronous Condensers Lateral Vibration Remediation
  - Discussions are ongoing with GE Power on the approach to lateral vibration remediation (elliptical bearing versus foundation remediation). Decision is pending.

- LITL Summary Schedule (December IPS)



- The focus for Q1 2021 is on continued completions, commissioning and integration of operations; and the forecast expenditure is estimated at approximately $34.9 Million.

4.2 Project Expenditures

December 2020 ($000)	Project Revised Budget September 2020	Cumulative $			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
Description	*A*	*B*	*C*	*C-B*	*D=B/A*	*E=C/A*	*E-D*
NE-LCP Owners Team, Admin and EPCM Services	$1,165,768	$1,106,888	$1,106,016	($872)	94.9%	94.9%	-0.1%
Feasibility Engineering	$35,847	$35,847	$35,847	$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	$40,706	$39,978	$40,140	$162	98.2%	98.6%	0.4%
Aboriginal Affairs	$52,301	$49,120	$49,206	$86	93.9%	94.1%	0.2%
Procurement & Construction	$8,703,799	$8,504,421	$8,477,378	($27,043)	97.7%	97.4%	-0.3%
Commercial & Legal	$119,345	$100,241	$97,669	($2,572)	84.0%	81.8%	-2.2%
Contingency	$59,205	$0	$0	$0	0.0%	0.0%	0.0%
TOTAL	$10,176,970	$9,836,495	$9,806,256	($30,239)	96.7%	96.4%	-0.3%

December ($000)	Project Revised Budget September 2020	Incurred Cumulative Costs December 2020	Project Final Forecast Cost December 2020	Variance PFC from Budget
Description	*A*	*B*	*C*	*D=A-C*
NE-LCP Owners Team, Admin and EPCM Services	$1,165,768	$1,106,016	$1,166,158	($390)
Feasibility Engineering	$35,847	$35,847	$35,847	$0
Environmental & Regulatory Compliance	$40,706	$40,140	$40,706	$0
Aboriginal Affairs	$52,301	$49,206	$52,301	$0
Procurement & Construction	$8,703,799	$8,477,378	$8,706,294	($2,495)
Commercial & Legal	$119,345	$97,669	$119,345	$0
Contingency	$59,205	$0	$56,321	$2,884
TOTAL	$10,176,970	$9,806,256	$10,176,972	($2)

Columns in tables may not total due to rounding

4.3 Contingency

December 2020 ($000)	Project Revised Budget September 2020	Project Forecast Cost September 2020	Project Forecast Cost December 2020	Change from Previous Quarter	Variance PFC from Budget
	A	*B*	*C*	*C - B*	*C - A*
Total Project	$59,205	$59,205	$56,321	($2,844)	($2,844)

Columns in tables may not total due to rounding

4.4 Earned Progress (December 2019)

Cumulative to end of December 2019	Weight Factor %	December 2019 Cumulative % Earned
Sub-Project	A	C
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%

Columns in tables may not total due to rounding

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	$397,565
Feasibility Engineering	$18,679
Environmental & Regulatory Compliance	$11,664
Aboriginal Affairs	$625
Procurement & Construction	$3,266,059
Commercial & Legal	$29,350
Contingency	$13,546
Labrador-Island Transmission Link Total	$3,737,488
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	$9,017
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 Generating Facility	Sep 2020 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 Transmission Link	Sep 2020 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 Line Construction 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

December 2020 ($000)	Project Revised Budget September 2020	Cumulative $			Cumulative %		
		Planned	Incurred	Variance	Planned	Incurred	Variance
Description	*A*	*B*	*C*	*C-B*	*D=B/A*	*E=C/A*	*E-D*
NE-LCP Owners Team, Admin and EPCM Services	$634,838	$601,045	$600,779	($266)	94.7%	94.6%	0.0%
Feasibility Engineering	$16,865	$16,865	$16,865	$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	$28,230	$27,577	$27,759	$182	97.7%	98.3%	0.6%
Aboriginal Affairs	$51,508	$48,390	$48,498	$108	93.9%	94.2%	0.2%
Procurement & Construction	$4,703,316	$4,587,194	$4,572,019	($15,175)	97.5%	97.2%	-0.3%
Commercial & Legal	$80,978	$66,809	$65,018	($1,791)	82.5%	80.3%	-2.2%
Contingency	$44,240	$0	$0	$0	0.0%	0.0%	0.0%
TOTAL	$5,559,974	$5,347,879	$5,330,938	($16,941)	96.2%	95.9%	-0.3%

December 2020 ($000)	Project Revised Budget September 2020	Incurred Cumulative Costs December 2020
Description	*A*	*B*
NE-LCP Owners Team, Admin and EPCM Services	$634,838	$600,779
Feasibility Engineering	$16,865	$16,865
Environmental & Regulatory Compliance	$28,230	$27,759
Aboriginal Affairs	$51,508	$48,498
Procurement & Construction	$4,703,316	$4,572,019
Commercial & Legal	$80,978	$65,018
Contingency	$44,240	$0
TOTAL	$5,559,974	$5,330,938

II. Labrador Island Transmission Link

December 2020 ($000)	Project Revised Budget September 2020	Cumulative $			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
Description	*A*	*B*	*C*	*C-B*	*D=B/A*	*E=C/A*	*E-D*
NE-LCP Owners Team, Admin and EPCM Services	$397,565	$373,634	$373,290	($344)	94.0%	93.9%	-0.1%
Feasibility Engineering	$18,679	$18,679	$18,679	$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	$11,664	$11,589	$11,570	($19)	99.4%	99.2%	-0.2%
Aboriginal Affairs	$625	$563	$542	($21)	90.1%	86.7%	-3.4%
Procurement & Construction	$3,266,059	$3,188,103	$3,178,417	($9,686)	97.6%	97.3%	-0.3%
Commercial & Legal	$29,350	$25,665	$24,899	($766)	87.4%	84.8%	-2.6%
Contingency	$13,546	$0	$0	$0	0.0%	0.0%	0.0%
TOTAL	$3,737,488	$3,618,233	$3,607,396	($10,837)	96.8%	96.5%	-0.3%

December 2020 ($000)	Project Revised Budget September 2020	Incurred Costs Cumulative December 2020
Description	*A*	*B*
NE-LCP Owners Team, Admin and EPCM Services	$397,565	$373,290
Feasibility Engineering	$18,679	$18,679
Environmental & Regulatory Compliance	$11,664	$11,570
Aboriginal Affairs	$625	$542
Procurement & Construction	$3,266,059	$3,178,417
Commercial & Legal	$29,350	$24,899
Contingency	$13,546	$0
TOTAL	$3,737,488	$3,607,396

III. Labrador Transmission Assets

December 2020 ($000)	Project Revised Budget September 2020	Cumulative $			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
Description	*A*	*B*	*C*	*C-B*	*D=B/A*	*E=C/A*	*E-D*
NE-LCP Owners Team, Admin and EPCM Services	$133,365	$132,209	$131,947	($262)	99.1%	98.9%	-0.2%
Feasibility Engineering	$303	$303	$303	$0	100.0%	100.0%	0.0%
Environmental & Regulatory Compliance	$812	$812	$811	($1)	100.0%	99.9%	-0.1%
Aboriginal Affairs	$168	$167	$166	($1)	99.4%	98.8%	-0.6%
Procurement & Construction	$734,424	$729,124	$726,942	($2,182)	99.3%	99.0%	-0.3%
Commercial & Legal	$9,017	$7,767	$7,752	($15)	86.1%	86.0%	-0.2%
Contingency	$1,419	$0	$0	$0	0.0%	0.0%	0.0%
TOTAL	$879,508	$870,381	$867,920	($2,461)	99.0%	98.7%	-0.3%

December 2020 ($000)	Project Revised Budget September 2020	Incurred Costs Cumulative December 2020
Description	*A*	*B*
NE-LCP Owners Team, Admin and EPCM Services	$133,365	$131,947
Feasibility Engineering	$303	$303
Environmental & Regulatory Compliance	$812	$811
Aboriginal Affairs	$168	$166
Procurement & Construction	$734,424	$726,942
Commercial & Legal	$9,017	$7,752
Contingency	$1,419	$0
TOTAL	$879,508	$867,920

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

December 2020	Planned Date September 2020	December 2020 Actual/Forecast
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	15-Mar-21*
Powerhouse Unit 3 Commissioned - Ready for Operation	31-May-21	31-May-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	1-Oct-21
Date Certain	November 2021	November 2021

* Updated forecast

II. Labrador Island Transmission Link

December 2020	Planned Date September 2020	December 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
1ST Power Transfer (Pole 1)	11-Jun-18	Completion of 45 megawatt heat run
Soldiers Pond Synchronous Condenser Ready for Operation	31-Aug-21	31-Aug-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	30-Sep-21
Commissioning Complete - Commissioning Certificate Issued	1-Oct-21	1-Oct-21
Date Certain	November 2021	November 2021

III. Labrador Transmission Assets

December 2020	September 2020 Planned Date	December 2020 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	1-Oct-21
Date Certain	November 2021	November 2021

End of Report