May 2016 Briefing AFE rev 4 $9.1B

Also included in this section is a letter from G Bennett to Julia Mullaley (Clerk of the Executive Council GNL) which was a response to the April 2016 EY report and discussed the policy for reporting of Material Cost Variances, handling of strategic risk and treatment of contingency.

This was a full briefing by the Project leadership and included EVP's and VP's. The briefing included a Project Overview, Cost and Schedule Update following the 2016 QRA , a review of Risks and a discussion on Astaldi and the current hold placed on further negotiations by GNL.

The cost requirement at a P75 value assumed we could continue with Astaldi and was built up from the previous AFE rev 3 of $7.65B and included $300M fot Lil and $600M for MFG for a total of $8.55B plus a further $450M for an expected Astaldi deal for a grant total of $9.1B

Schedule analysis also assumed we could continue with Astaldi with a P75 value for First power of August 2019 and Full Power may 2020.

There are also emails dealing with the complex matter of notifications and the protocols associated with that and the communications process for LIL cost and schedule following the QRA.

nalcor energy

Corporate Office
500 Columbus Drive
P.O. Box 12800
St. John's, NL Canada A1B 0C9

April 12, 2016

Ms. Julia Mullaley
Clerk of the Executive Council
Cabinet Secretariat
Government of Newfoundland and Labrador
Confederation Building
St. John's, NL A1B 4J6

See page 4 for discussion of timing of public disclosure of cost overruns

Dear Ms. Mullaley:

Re: LCMC Management Response to EY Review of Muskrat Falls Project Cost, Schedule and Related Risk – April Report

Lower Churchill Management Corporation (LCMC) has had an opportunity to review EY's April report commissioned by the Government Oversight Committee to review cost, schedule, and related risk for the Muskrat Falls Project. This letter provides LCMC's response to the points raised in EY's April report along with additional context surrounding the points raised.

LCMC recognizes the Government of Newfoundland and Labrador's desire for further clarity with respect to cost and schedule as well as potential risks. EY's review was treated as a priority and LCMC provided access to extensive relevant documentation from LCMC's files and full access to senior staff.

The management of project cost and schedule is a critical and ongoing activity. LCMC is actively managing cost, schedule and related risks. LCMC had recognized that the September 2015 cost update was outdated, and actions to update the project cost and schedule forecasts, including a mid-project risk assessment, were initiated and underway as part of ongoing project management activities prior to the start of the EY review. LCMC provided EY with the perspectives that total cost of $7.653 billion and first power in December 2017 would not be achieved. LCMC acknowledged and communicated publicly in the fall of 2015 that the cost and schedule estimates were subject to adjustment.

1. Reasonableness of the September 2015 Cost and Schedule Update:

Through the course of its review, EY reviewed existing schedules as well as cost updates developed by LCMC over the summer of 2015 and released publicly in September 2015. While it was evident at that time that cost and schedule data could potentially change over the following months primarily due to uncertainty associated with powerhouse construction and commercial discussions with the primary civil contractor, Astaldi, LCMC believed it prudent to be transparent and share the information as it was understood at that time with the public. With this in mind, concurrent with the September 2015 release of information, LCMC noted publicly that there was also an issue with powerhouse progress which would impact schedule on a go-forward basis as further analysis and management action took place. In addition, LCMC also noted there was still cost exposure related to the project.

In addition, as has been the practice since project inception, as the project evolves, key stakeholders have been consistently briefed on project issues and outlook, including the Government of Newfoundland and Labrador, the Boards of Directors of Nalcor and the Lower Churchill Project (LCP) subsidiaries, the Government of Canada, and the project's Independent Engineer.

Due to the passage of time, the availability of new information, and ongoing analysis which now makes the September 2015 cost update outdated and thus no longer fully relevant, LCMC had taken action to commence an update of the September 2015 capital cost and schedule estimates. Specific actions underway include a risk assessment as well as a review of forecasted final cost and schedule for the projects' major contracts. LCMC notes that this was acknowledged by EY in their April report.

LCMC provided EY with this historical perspective during initial briefings at the beginning of their review. EY was advised that subsequent analysis and an improved understanding of the impacts of schedule delays with Astaldi related to powerhouse construction translated to cost estimates that would surpass the latest public update of $7.653 billion.

EY's April report primarily focuses on the impacts of the following two risks:

1. The progress of Astaldi, the civil contractor for the Muskrat Falls powerhouse and spillway, is tracking behind the original project schedule.
2. The progress of construction on the HVdc transmission line is challenged by weather and field conditions.

These and other significant risks have already been identified, documented, mitigation strategies developed and are being actively managed by LCMC. LCMC offers the following specific comments in relation to the aforementioned risks and EY's observations from the Executive Summary of their April report:

Muskrat Falls Powerhouse

LCMC advised the public and Government in September of 2015 that the target date for first power in late December 2017 would not be achievable. This was acknowledged by the Oversight Committee who noted in its report for the period ending August 2015:

> *"The risk for schedule delays due to powerhouse concrete placement remains high. Contractor performance in the powerhouse and intake remains a key area of focus for the contractor and Nalcor."*

The Oversight Committee also noted in this report that despite improvements in the performance of the civil contractor for the Muskrat Falls Generating Facility, further schedule slippages:

> *"could impact costs beyond the Project execution risk contingency that has been established."*

The delays to powerhouse construction are primarily attributable to a poor start by the contractor in 2014. LCMC notes the performance of Astaldi throughout 2015 showed a marked improvement over 2014, with concrete placement volumes meeting industry

norms. The contractor also successfully executed a winter construction program which focused on removal of the Integrated Cover System, rebar installation and formwork construction. This has left Astaldi properly positioned to continue concrete placement at acceptable rates in 2016.

HVdc Transmission Line Construction

While construction of the 315 kilovolt (kV) transmission lines that are part of the Labrador Transmission Asset (LTA, the new ac transmission line between Churchill Falls and Muskrat Falls) is tracking ahead of schedule, the 350kV transmission lines portion of the HVdc Labrador-Island Transmission Link (LIL) construction has tracked behind schedule. However, recent trends are showing a positive outlook for this work.

There have been a number of performance challenges faced by the contractor which continue to pressure the HVdc transmission line construction schedule, such as above seasonal winter temperatures and other unfavorable weather conditions. LCMC will continue to assess the impact on schedule and would concur delays are possible without effective mitigation strategies. As part of its ongoing management of this scope, LCMC will continue to examine options with its construction contractor for minimizing schedule slippage. These include the contractor mobilizing additional resources – including those planned to move from the LTA to the LIL when work on the LTA concludes.

Reporting of Anticipated Material Cost Variances

EY notes some anticipated material cost variances have only been reflected in the forecast cost when they are contractually committed. LCMC believes this to be a prudent approach to cost reporting as it focuses on real variances instead of issues which are premature. Many issues are able to be addressed with aggressive mitigation.

It is LCMC's opinion that reporting such variances prematurely does not add value to the project and only serves to undermine the credibility of reporting processes. In addition, public disclosure of speculative cost impacts that have not materialized is not commercially prudent at the very time discussions and/or negotiations are occurring with contractors. This methodology is also consistent with LCMC's obligations under the Federal Loan Guarantee (FLG) and the agreed approach to final cost forecasting with the Independent Engineer and the Government of Canada.

2. Treatment of Contingency:

LCMC is fully committed to both transparency and protecting the commercial interests of the people of Newfoundland and Labrador. We seek to achieve this balance by publicly releasing information when the information ceases to be commercially sensitive (which includes, but not limited to, impacting negotiations and other dealings with contractors).

Consistent with industry best-practice for large capital projects, LCMC conducts project reviews at major decision points and midway through project execution. Risk identification and mitigation has been an ongoing project activity since project inception.

At the start of EY's review, LCMC informed EY of its ongoing work to complete a comprehensive risk assessment to more accurately identify a range of estimated potential project cost and schedule, as well as the likely probability of achievement. LCMC notes this work was underway prior to EY commencing its review.

EY has recommended to the Oversight Committee that LCMC adopt a more conservative approach to budget reporting, which will see cost estimates and contingency move from LCMC's aggressive, lower contingency allocation to a much higher contingency allocation, including allowances for strategic risk. LCMC believes this will tend to drive increased project capital cost for two reasons:

1. Due to the highly public nature of the project, the early communication of large, unrealized contingency values will reduce LCMC's ability to effectively negotiate with its contractors in the best interests of the people of Newfoundland and Labrador.
2. Project entities manage to budget and tighter contingency allocations are one element which tend to further drive aggressive cost management.

In addition, through the provisions of the project financing agreements and the FLG, unconfirmed contingent amounts would require equity pre-funding from the Province.

LCMC believes that these are key factors in determining the level of contingency that should be carried for this project. These commercial considerations need to be balanced with the need for transparency.

3. Identification and Allocation of Costs for Strategic Risk

EY notes that LCMC has identified and documented risks associated with all remaining scope and has processes in place to mitigate those risks. These risks are maintained in a risk register and regularly reviewed by project managers.

For clarity, risks typically pertaining to external issues that are beyond the ability of any project team to manage or influence should they occur are categorized as strategic, for example, things such as, but not limited to, extreme weather events, global or local economic trends, or regulatory approvals.

At sanction, to demonstrate the project's ability to accommodate strategic and other unforeseen risks, LCMC provided a comprehensive sensitivity analysis for a number of variables which could impact the overall economic viability of the project, including changes in capital costs, schedule delays and oil prices. This analysis was validated by the external consultant, Manitoba Hydro International, commissioned by the Provincial Government as part of their due diligence process. Sensitivity analysis was also completed at Decision Gate 2, and was shared with the Newfoundland and Labrador Board of Commissioners of Public Utilities (PUB) in 2011.

These sensitivity analyses demonstrated that the preference for the development of the Muskrat Falls Project remained robust under a number of significant deviations to key project variables, demonstrating the project's ability to accommodate strategic and other unforeseen risks. In addition, the Muskrat Falls (Interconnected Island) alternative for provision of power to the Province provides significant incremental sources of revenue to the Province, providing flexibility to cover a broad range of strategic and other risks.

It is also worth noting that consideration was given to the potential impact of strategic risks as part of Government making its commitment to provide the base level and contingent equity required to support the project achieving in-service. This is reflected in the November 2012 FLG Agreement and the November 2013 Intergovernmental Agreement between the Province and the Government of Canada (both of which are available on the Muskrat Falls Project website), as well as the formal equity guarantee agreements executed by the Province in November 2013 in support of the FLG and $5 billion debt financing.

LCMC wishes to note that regular and timely briefings are provided to the six LCP subsidiaries, each of which has its own Board of Directors, as well as to the Nalcor Board. In addition, changes to the project master budgets are approved by the Boards of Directors of relevant Project companies, who are provided with all relevant information and access to Project personnel to satisfy their due diligence responsibilities. The composition of these Boards complies with the Energy Corporation Act requirements for independent Directors. Further, under the obligations of the FLG, the LCP subsidiaries involved with the financing arrangements must have an even higher level of board independence.

Nalcor also reports to the public through the release of quarterly and annual financial statements for Nalcor and all its subsidiaries, including those related to the LCP, and an Annual Report which is discussed during a public Annual General Meeting. Nalcor's annual financial statements are audited by its independent auditors, Deloitte, who also conduct special audit procedures on the accounts and records of the LCP subsidiaries at the request of the Oversight Committee. This is in addition to ongoing reporting to the Independent Engineer, Government of Canada and the Oversight Committee.

EY says, "Project governance refers to the overall framework within which decisions are made. This covers four elements: structure, people, information and assurance, which combine to provide the necessary experience, diversity, independence, challenge and oversight to project reporting, decision making, planning and forecasting."

LCMC notes that in 2013, the Institute of Internal Auditors Inc. conducted an external quality assessment of Nalcor Energy's internal audit function, which includes LCMC. The review included extensive interviews with the chair of Nalcor Energy's Audit Committee,

executives, external auditors and Internal Audit (IA) staff. Also reviewed were the IA activity's risk assessment and audit planning processes, audit tools and methodologies, governance, risk management and control.

The review of the Institute for Internal Auditors concluded overall that Nalcor Energy "generally conforms to the Standards and Definition of Internal Audit," where generally conforms is determined to be the top rating an organization can be assessed.

LCMC also engaged Independent Project Analysis (IPA) in the fall of 2015 to conduct an external assessment of the management processes and practices used by LCMC. IPA noted the following:

- "The [LCMC] organization has overall good staffing to manage all execution scopes..."
- "Systems are in place to manage and control progress."
- "Systems [are] in place and coordinated effort [is occurring] by quality management, project controls, procurement and technical integration."

LCMC is committed to meeting the needs of all stakeholders in respect of project governance and reporting and will continue to work with the Oversight Committee to achieve best value from the Muskrat Falls Project for the people of Newfoundland and Labrador in an open and transparent manner.

Sincerely,

Gilbert J. Bennett, P. Eng., FCAE
Vice President

cc. E.J. Martin, President and CEO, Nalcor Energy

Re: QRA and Astaldi Next Steps- Rev 1
Paul Harrington to: James Meaney 05/12/2016 03:09 PM
Cc: Gilbert Bennett, Lance Clarke, Steve Pellerin

Jim
Ok changes made and the AFE approval by GPCo June 22nd has been moved further down the chain of events to be more logical. I have also put the EY involvement decision in the second box - this should be sorted out during the Premier/Minister briefing meeting
Please destroy previous version

next steps QRA and Astaldi rev 1.pptx

Paul Harrington
Project Director (Consultant to LCMC)
PROJECT DELIVERY TEAM
Lower Churchill Project
t. **709 737-1907** c. **709 682-1460** f. **709 737-1985**
e. **PHarrington@lowerchurchillproject.ca**
w. **muskratfalls.nalcorenergy.com**

James Meaney Hi Paul Some considerations on QRA timeline 05/12/2016 02:20:34 PM

From: James Meaney/NLHydro
To: Paul Harrington/NLHydro@NLHydro
Cc: Gilbert Bennett/NLHydro@NLHYDRO, Lance Clarke/NLHydro@NLHYDRO
Date: 05/12/2016 02:20 PM
Subject: Re: QRA and Astaldi Next Steps

Hi Paul
Some considerations on QRA timeline

1. Under 2nd box should it say "Premier's Office and Minister" or just "Minister" instead of "GNL and Minister"?
2. Protocol 1 - I think it will need to be Boards.....Nalcor and the LCP Boards (we could do them all in one meeting/call)
3. Protocol 2 - It will need to be the LIL GPCo Board, not Nalcor Interim Board, that approves the Revised LIL AFE. Currently the GPCo is not properly constituted as Ed, Ken and Gerry all gone. There is a scheduled LIL GPCo Board meeting on June 22. We need to talk through with Stan and Peter how and when we get the LIL GPCo constituted to facilitate this.
4. Protocol 3 - Should "seeking clarity on EY role/review" be moved up to #1 above versus left to OC.....I am not sure they really have any say in this anymore?
5. Protocol 4 - June 7 timing looks reasonable (maybe a bit sooner). I had brief chat with Derrick on Stan's expectations of Canada meeting. Suggest Derrick join the discussion with Stan when we review the timeline and we can propose approach/agenda for Canada engagement (I am now leaning towards the ADM/DM meeting first approach).
6. Protocol 5/6 - I think timing of this may depend what I have noted on #3 above with

respect to LIL GPCo Board approval of AFE.

I am good with Astaldi timeline.

Regards
Jim

James Meaney
General Manager, Finance
PROJECT DELIVERY TEAM
Lower Churchill Project
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w. muskratfalls.nalcorenergy.com

Paul Harrington Please find attached a short deck that provides :... 05/12/2016 01:10:26 PM

Re: Meeting with Stan tomorrow
Paul Harrington to: James Meaney 05/12/2016 05:02 PM
Cc: Derrick Sturge, Gilbert Bennett, Lance Clarke

Here is the final revision to the QRA/Astaldi next steps deck
Regards Paul

next steps QRA and Astaldi rev 2.pptx

Paul Harrington
Project Director (Consultant to LCMC)
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w. muskratfalls.nalcorenergy.com

James Meaney Hi Gilbert Will you be setting up the meeting with... 05/12/2016 04:11:33 PM

From: James Meaney/NLHydro
To: Gilbert Bennett/NLHydro@NLHydro
Cc: Derrick Sturge/NLHydro@NLHydro, Paul Harrington/NLHydro@NLHydro, Lance Clarke/NLHydro@NLHydro
Date: 05/12/2016 04:11 PM
Subject: Meeting with Stan tomorrow

Hi Gilbert
Will you be setting up the meeting with Stan tomorrow morning (given meeting with Emera in afternoon) to discuss QRA/Astaldi timeline?
Had a brief chat with Derrick about approach for the Canada meeting in early June. Suggest we all have that discussion with Stan tomorrow.
Might also be good to get his view on filling vacant LCP Board spots where we need LIL GPCo to approved revised AFE in June.
Thanks
Jim

James Meaney
General Manager, Finance
PROJECT DELIVERY TEAM
Lower Churchill Project
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Roll Out of QRA Cost and Schedule Results
May 2016

Boundless Energy

Rev 2

nalcor energy
LOWER CHURCHILL PROJECT

Next Steps QRA

Complete 11 May 2016

Present LTA/LIL/MFG QRA Cost and Schedule results to CEO and Leadership Team

It is recommended that Premier's office and Minister are advised week of May 15 by the VP

Present LTA/LIL/MFG QRA Cost and Schedule results to GNL (By CEO/VP) Decide if any EV involvement

It is recommended that The Boards are advised week of May 15 by the VP

PROTOCOL 1
Advise Nalcor and the LCP Boards of LTA/LIL/MFG QRA Cost and Schedule results

It is recommended that the OC Chair and DNR representative is briefed and they decide on further briefing of the broader group

PROTOCOL 2
Present LTA/LIL/MFG QRA Cost and Schedule results to OC Chair and DNR representative

It is recommended that Canada /IE are provided with LTA/LIL results plus a range for MFG Target June 7

PROTOCOL 3
Present LTA/LIL/MFG QRA Cost and Schedule results to Canada/IE

Potential IE review of LIL/LTA QRA

Decide on ADM/DM meeting first approach

It is recommended that ENL are advised of LTA/LIL QRA however not MFG. Target June 9

PROTOCOL 4
Advise ENL of LTA/LIL QRA Cost and Schedule results

LIL AFE required
The LIL GPCo board will need to be constituted to facilitate this approval June 22

PROTOCOL 5
LIL AFE Rev 3 submitted & approved By LIL GPCo Board

Target for Press Release June 23

PROTOCOL 6
Nalcor issues Press Release of LTA/LIL QRA cost and schedule results

LOWER CHURCHILL PROJECT

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Next Steps Astaldi

LOWER CHURCHILL PROJECT

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Sharing our ideas in an open and supportive manner to achieve excellence.

Teamwork

Open Communication

Fostering an environment where information moves freely in a timely manner.

Honesty and Trust

Being sincere in everything we say and do.

Relentless commitment to protecting ourselves, our colleagues, and our community.

Safety

Respect and Dignity

Appreciating the individuality of others by our words and actions.

Leadership

Empowering individuals to help, guide and inspire others.

Holding ourselves responsible for our actions and performance.

Accountability

LOWER CHURCHILL PROJECT

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20160511 MF CEO Briefing Document V_F.pptx

Brian Crawley to: Gilbert Bennett, Paul Harrington, Lance Clarke, Ron Power, Jason Kean, James Meaney, Derrick Sturge

05/10/2016 05:30 PM

Cc: "Meade, Aidan"

Final deck for tomorrow.

- 20160511 MF CEO Briefing Document V_F.pptx

Hide Details

Muskrat Falls & Lower Churchill Project

Wed 05/11/2016 9:00 AM - 12:00 PM

Attendance is **required** for Paul Harrington

Chair: **Stan Marshall/NLHydro**

Sent by: **Bev Tucker/NLHydro**

Location: Boardroom, Level Six

This entry has an alarm. The alarm will go off 5 minutes before the entry starts.

Required: Brian Crawley/NLHydro@NLHydro, Gilbert Bennett/NLHydro@NLHydro, James Meaney/NLHydro@NLHYDRO, Jason Kean/NLHydro@NLHydro, Lance Clarke/NLHydro@NLHydro, Paul Harrington/NLHydro@NLHydro

Description

9:00am – 12:00 pm	**Muskrat Falls(MF) /Lower Churchill Project (LCP)** • Project Overview • Cost and Schedule Update • Risk Review • Astaldi	Gilbert Be Derrick St Paul Harri Ron Powe Jason Kea Lance Cla Brian Cra James Me

Personal Notes

deck for tomorrow

Brian Crawley to: Gilbert Bennett, Paul Harrington, Jason Kean, Ron Power, Lance Clarke, James Meaney, Derrick Sturge

05/10/2016 03:58 PM

Cc: "Meade, Aidan"

Confidential and Commercially Sensitive

20160511 MF CEO Briefing Document V_F.pptx

Lower Churchill Project

CEO Briefing Document

Boundless Energy

Presented to Stan Marshall 11-May-2016 (Hydro Place - 0830 to 1200).
Meeting attended by Nalcor VPs.

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LOWER CHURCHILL PROJECT

20160511 V_F

11 MAY 2016

May 2016

Contents

- LCP safety focus and achievement
- LCP project background
- Current project status
- Key risks to project completion
- Current cost and schedule outlook, including risk exposure
- Path forward

LCP safety performance is among the best in NL

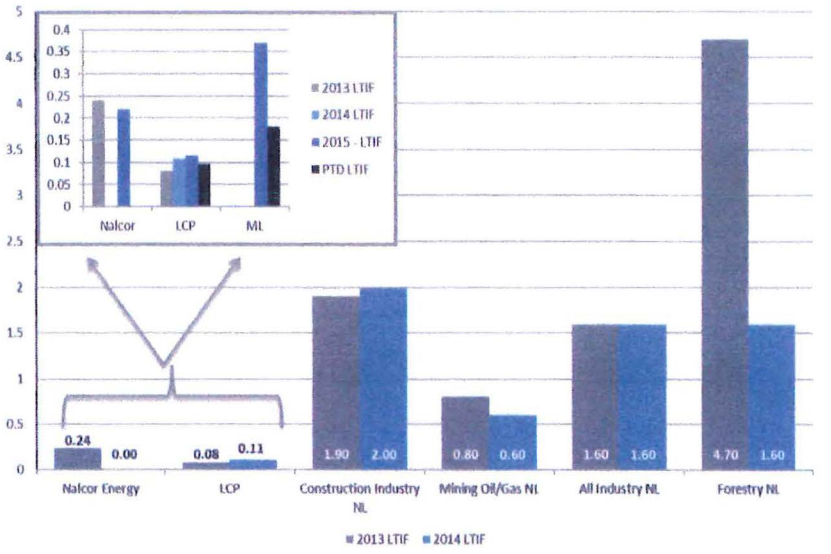
LCP safety beliefs

- We believe all incidents are preventable and an incident-free workplace is both achievable and sustainable
- Safety and productivity go hand-in-hand
- LCP has a reputation of being a safe place to work
- ~20 million person-hours worked to date with 11 contractor LTIs - all have returned to work
- Nalcor's safety culture has taken a foothold across the project, evident by positive indicators project-wide (e.g., worker engagement, behaviors and attitudes)

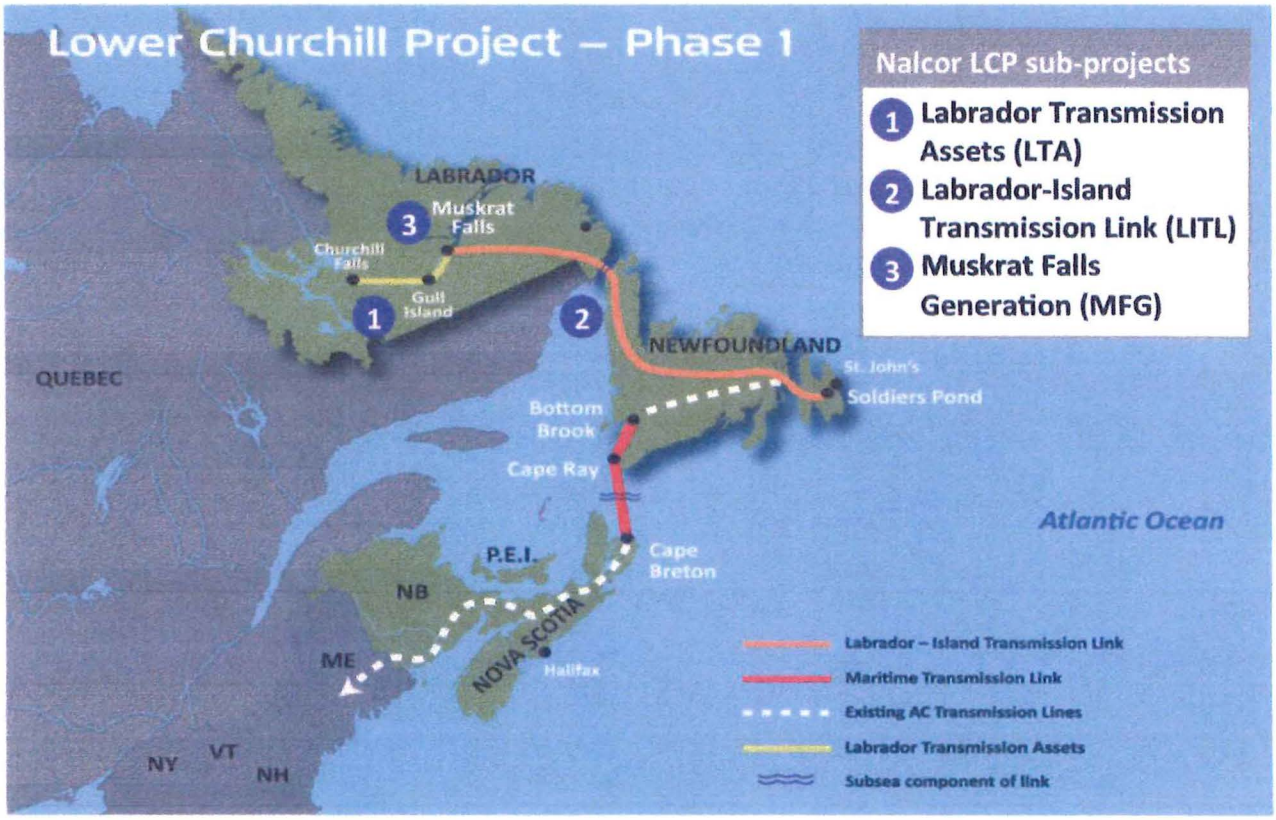
Safety performance comparison

Lost time incident factor (LTIF)

LTI *200,000 / # of hours worked in the period



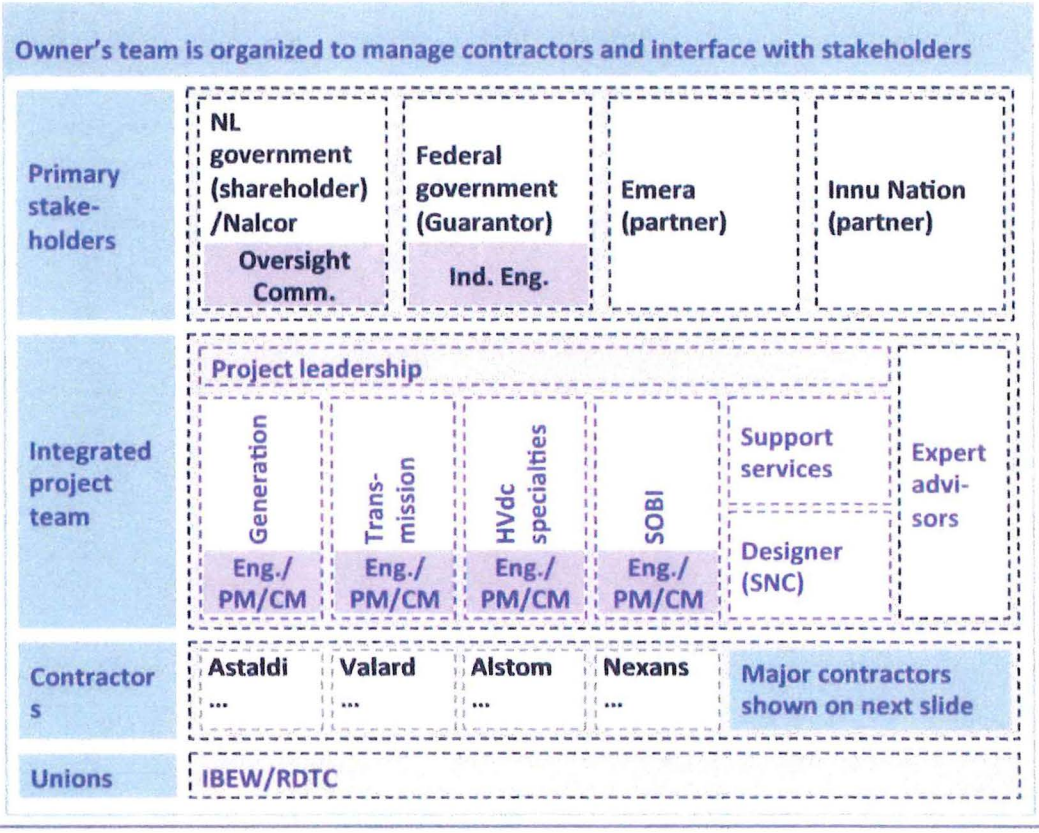
Nalcor portion of LCP consists of 3 sub-projects



Owner's team includes design, procurement, and construction management roles

Details of Owner's team

- LCP is managed by an integrated project team concept to manage the many stakeholders, contractors, and geographical dispersion of the work
- Organization model designed to reflect execution and contracting strategy. Model supported by Independent Eng. and IPA
- The project team is staffed with a mix of Nalcor personnel, consultants, staffing agencies, and engineering companies (e.g., SNC, Hatch)



Contract approach is toward larger scopes that use fixed-pricing to the extent practical

Active LCP contractors with scopes >C$100 million account for ~67% of current AFE

	Name	Value[1] (C$M)	Scope	Contract type
LTA	▪ Valard	270	T-line construction AC	Unit-rate installation contract
	▪ Alstom	210	CF/MF switchyards	Lump sum EPC
LITL	▪ Valard	890	T-line construction DC	Unit-rate installation contract
	▪ Alstom	740	Switchyards, converter stations, synchronous condensers	Lump sum EPC
	▪ Multiple	400	Clearing and access	50% unit-rate/lump sum, 50% reimbursable
	▪ Nexans	150	Subsea cable	Lump sum EPC
MFG	▪ Astaldi	1,140	Powerhouse, intake, and spillway, transition dams	Labor capped target-price / non-labor unit-rate
	▪ Andritz	440	Turbines, generators, and gates	Lump sum EPC
	▪ Barnard Pennecon	290	Dams	Non-labor unit-rate/ reimbursable labor
	▪ TBD	210[2]	Balance of plant	TBD
	▪ Gilbert	140	North Spur stabilization	Reimbursable
	▪ Johnsons	130	Reservoir clearing	Lump sum

1 Approximate budget value 2 AFE value equal to ~$156 million. $50 million of AFE contingency is reserved for the difference

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Although behind plan, MFG is now progressing at expected pace; LITL opportunities under evaluation

■ To date Remaining — Approved schedule

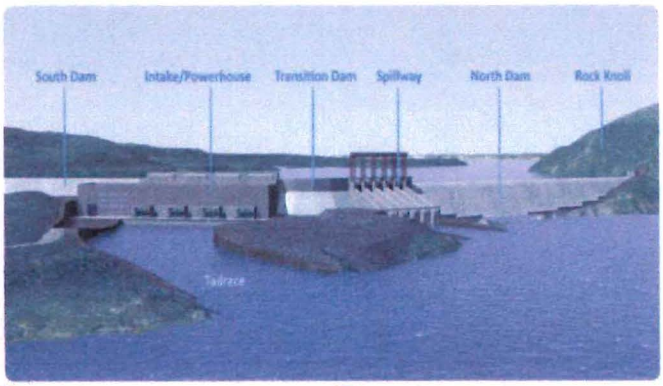
Project phase		Progress	Details on progress to date	Details on 2016 progress
Engineering		Substantially complete	▪ Detail design 100% complete	▪ Follow-on engineering support
Procurement		Substantially complete	▪ Major equipment manufactured or in final stages	▪ All major equipment manufactured and onsite
Construction overall		44% / 59%	▪ All work-fronts open ▪ 50-60 active work-fronts within province across 1350 km	▪ Beginning to close work-fronts ▪ Labrador T-lines complete ▪ SOBI complete
Construction	LTA	73% / 72%	▪ Clearing and access complete ▪ All foundations/towers installed ▪ Stringing 98% complete ▪ Switchyards 40% complete	▪ Stringing complete by Q2 2016 ▪ Switchyards substantially complete
	LITL	39% / 52%	▪ Clearing and access 75% complete ▪ T-line 55% complete for Labrador ▪ Conv. stations/transition compounds 18% complete ▪ Switchyards and synch. cond. 36% complete	▪ Clearing and access complete ▪ T-line complete for Labrador ▪ Switchyards and sync. cond. substantially complete ▪ HVdc Converter Stations 70% complete ▪ SOBI cables installed
	MFG	41% / 62%	▪ Bulk excavation and infra. complete ▪ Primary spillway structure complete, powerhouse 24% complete, North Spur 44% complete ▪ Dam construction underway	▪ Powerhouse concrete ~ 55% complete (Astaldi target of 130,000 m^3 of concrete installed for year) ▪ River diversion ▪ Reservoir preparations complete ▪ North Spur nearing completion

Work is progressing on all fronts – LTA/LITL

Key

1. Churchill Falls AC substation
2. Muskrat Falls AC substation
3. HVac last tower erection
4. HVac line
5. SOBI subsea cable
6. MF converter station
7. Stringing operations
8. Soldiers Pond synchronous condenser
9. Soldiers Pond converter station

Work is progressing on all fronts - MFG



Key

1. North dam – starter groin
2. North Spur
3. Temporary spillway bridge
4. TG Factory Acceptance Test (FAT)
5. TG ready for shipment
6. Powerhouse
7. Transition dam
8. Spillway
9. Separation wall

While project risks are understood and being managed, issues remain

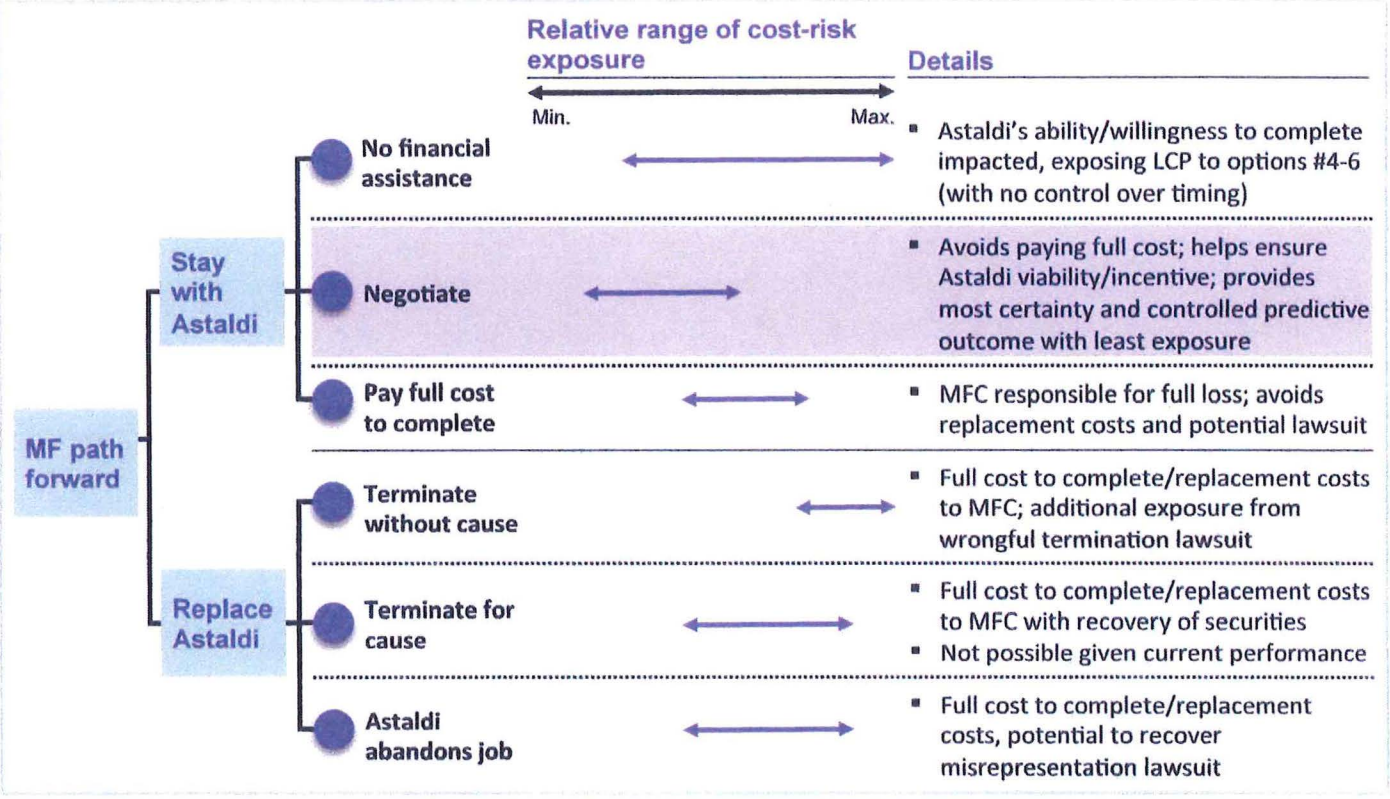
Additional detail on next slides

	Key risks	Impact	Mitigations
LTA/LITL	▪ Access for T-lines	▪ Cost	▪ Aggressive procurement to limit impact (benefit of increased reliability access)
	▪ Contractor performance issues (e.g., Valard and Alstom)	▪ Mostly schedule, some cost	▪ Early engagement of contractor team and leadership ▪ Increased LCP oversight
MFG	▪ Astaldi ability/willingness to complete scope	▪ Cost and schedule	▪ Negotiate path forward, limiting Nalcor's exposure to the extent possible
	▪ Astaldi performance issues	▪ Cost and schedule	▪ Ensure performance meets plan in the short-term; long-term mitigation linked to negotiation
	▪ Other contractor performance issues (e.g., Andritz)	▪ Cost and schedule	▪ Continue to ensure performance meets plan ▪ Early contractor engagement if issues arise ▪ Increased LCP oversight
All projects (LCP wide)	▪ Public nature of the project	▪ Cost and schedule	▪ Work with stakeholders to clearly define decision-making path (e.g., Astaldi negotiations)
	▪ Project integration/ operational readiness	▪ Delayed start-up	▪ Planning and hiring begun for integration and operations roles

Astaldi

What we shared with the Govt.: Negotiating with Astaldi provides the least cost-risk exposure

Preferred option



nalcor energy

Where we are today: Significantly improved concrete production and a solid foundation in place for summer construction season; commercial negotiations on hold

Current performance

- **2015 production exceeded external advisor expectations – ~123,000 m^3 vs. ~110,000 m^3**
- **2015/2016 winter construction program, including removal of ICS structure, proceeded as scheduled**
- **2016 production has proceeded as planned, commercial positions hardening**

Next steps and key dates with Astaldi

	Details
Next steps	▪ Reach internal agreement on path forward with Astaldi ▪ Obtain mandate for next steps ▪ Respond to Astaldi's justification for incremental compensation ▪ Reach final agreement
Key dates	▪ July – Contract labor cap (LMAX) reached ▪ June 30 – Astaldi auditor deadline set for resolution of MFG and covenant calculation ▪ August – Astaldi arrives at cash flow cliff

Cost and Schedule Quantitative Risk Analysis

Cost and schedule risk exposure centers on specific scopes

Projected cost within +/- 10% of current AFE[1] or meeting approved schedule

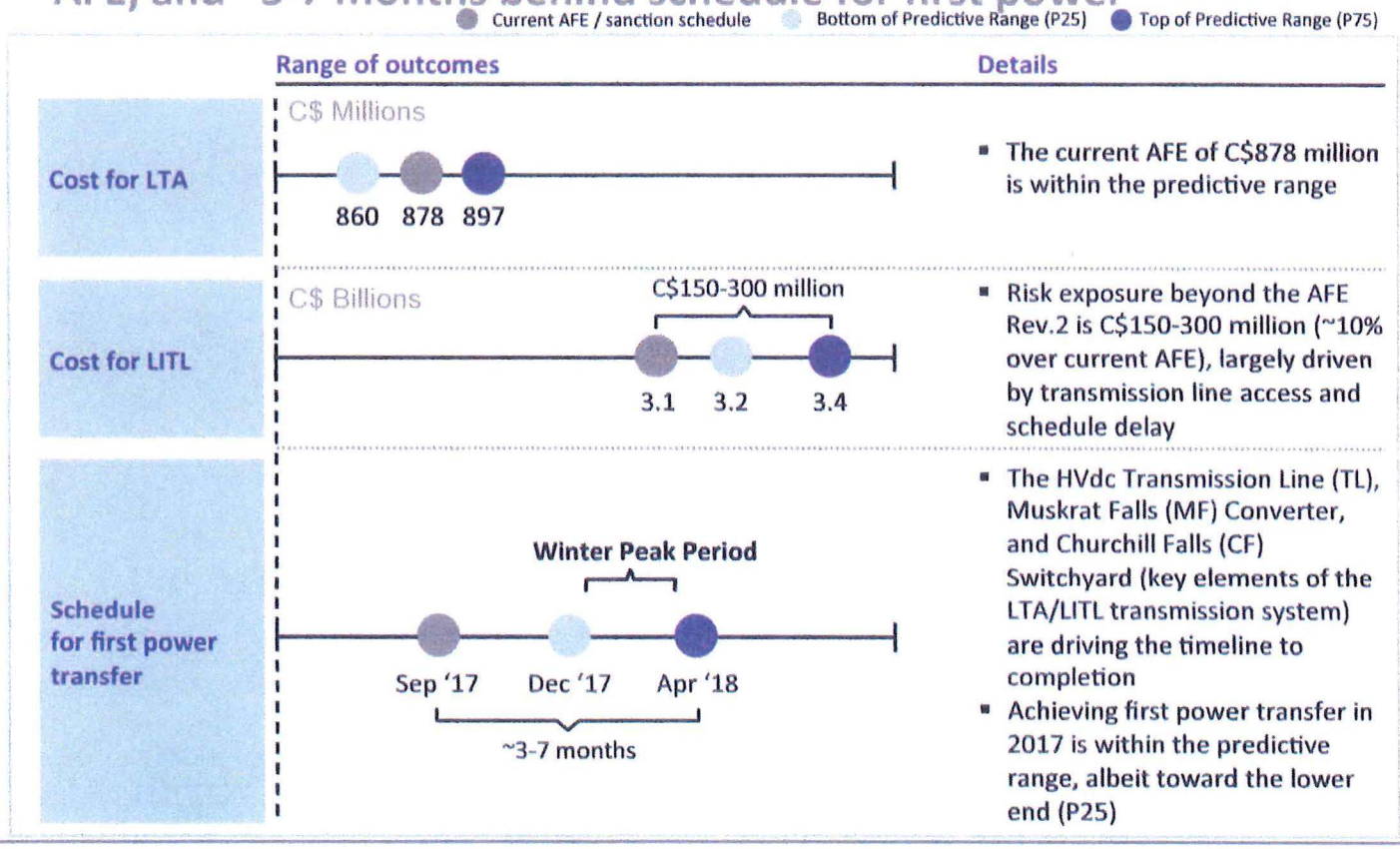
Risk of going outside +/- 10% of current AFE or beyond approved schedule

Projected cost outside +/- 10% of current AFE or beyond approved schedule

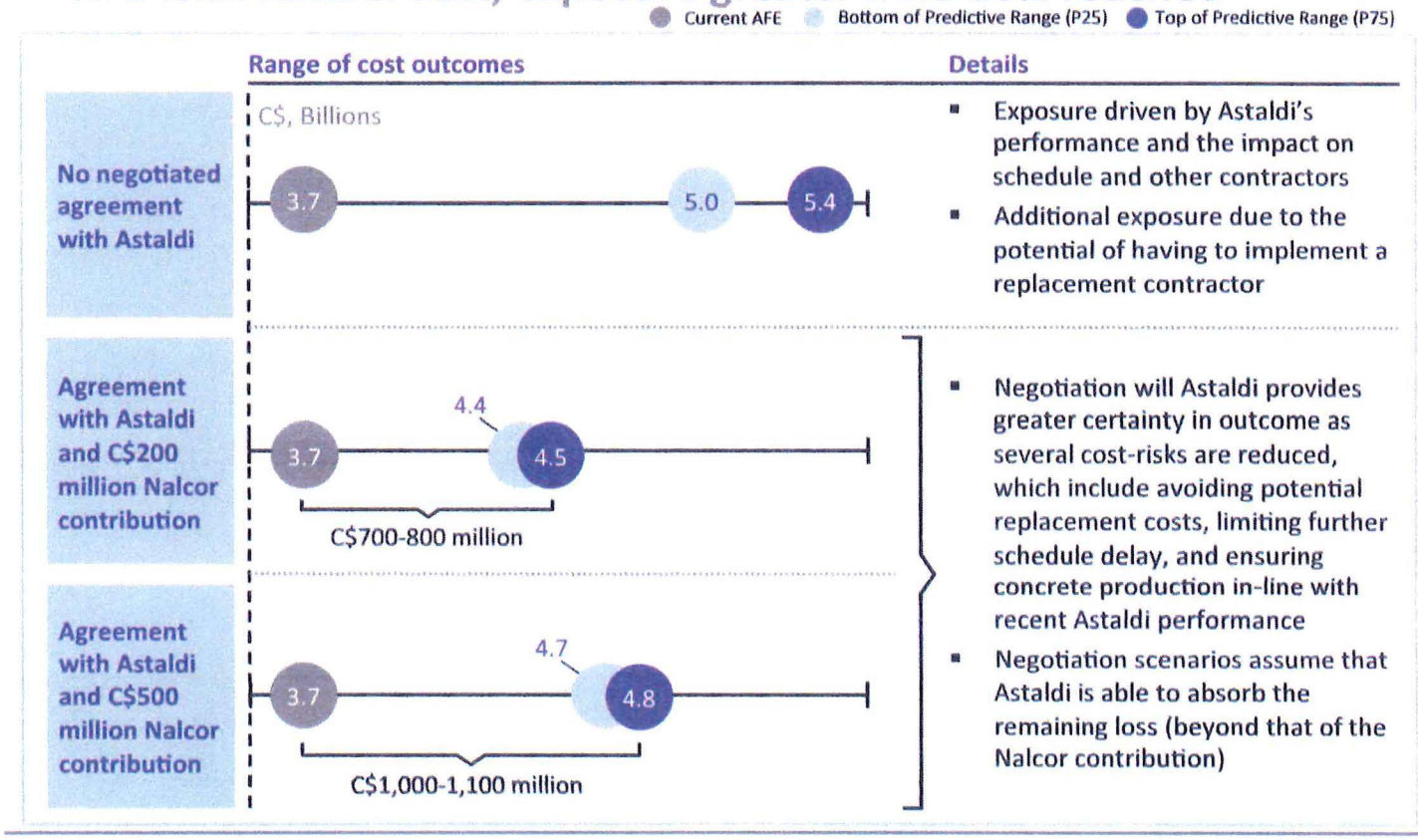
	Latest AFE C$ Billions	Scheduled complete	Status Cost	Status Schedule	Contractor	Latest AFE C$ Millions	Status Cost	Status Schedule
LTA	0.88	Sept. 2017			Valard	270		
					Alstom	210		
					Balance of scope	400		
LITL	3.09	Sept. 2017			Valard	890		
					Alstom	740		
					Clearing and access	400		
					Nexans	150		
					Balance of scope	910		
MFG	3.66	Dec. 2017			Astaldi	1,140		
					Andritz	440		
					Barnard	290		
					BOP (TBD)	210		
					Gilbert	140		
					Johnson	130		
					Balance of scope	1,310		
Total	7.65							

1 Exposures within mega-project industry

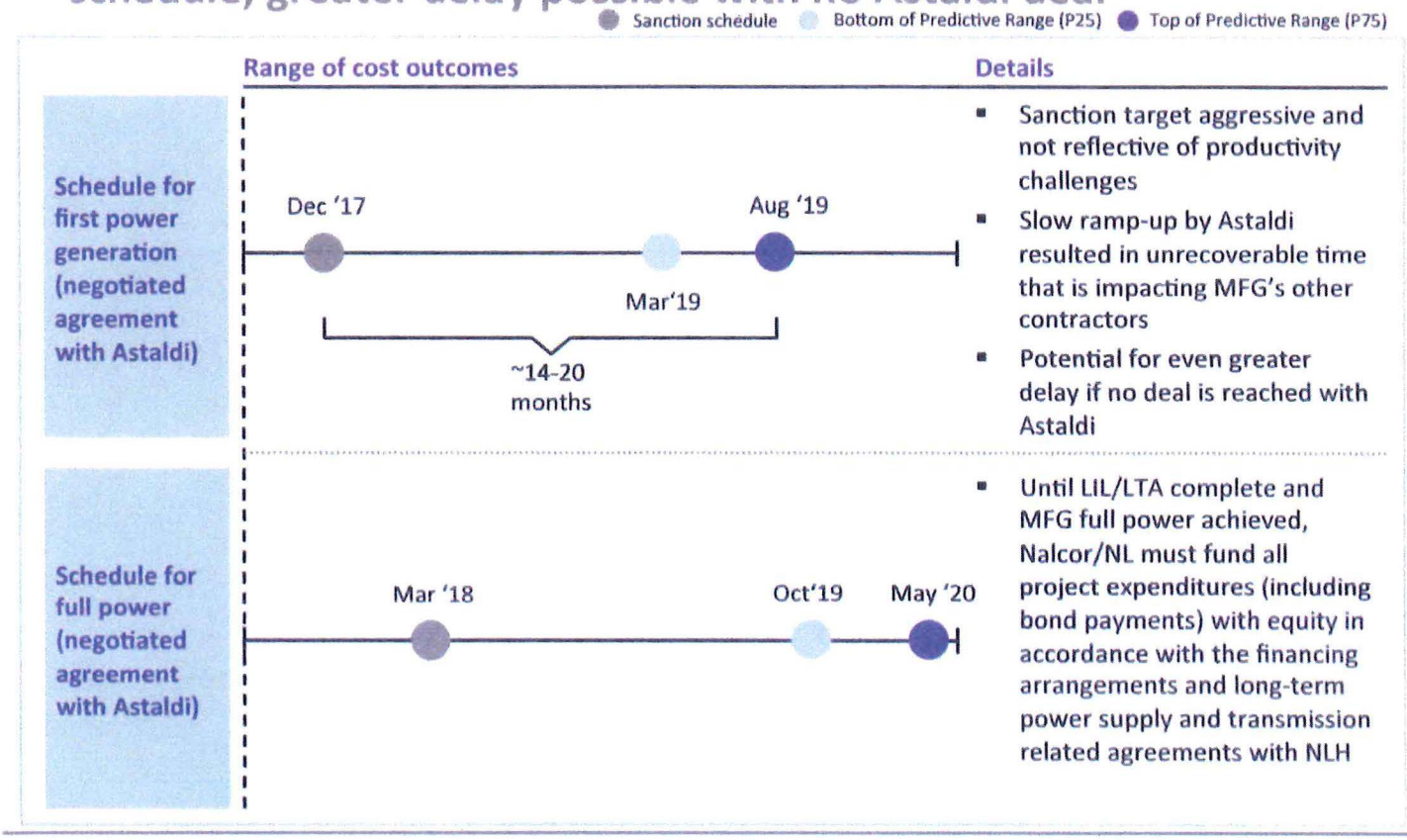
Risk exposure for LTA/LITL ~C$150-300 million (~10%) above AFE, and ~3-7 months behind schedule for first power



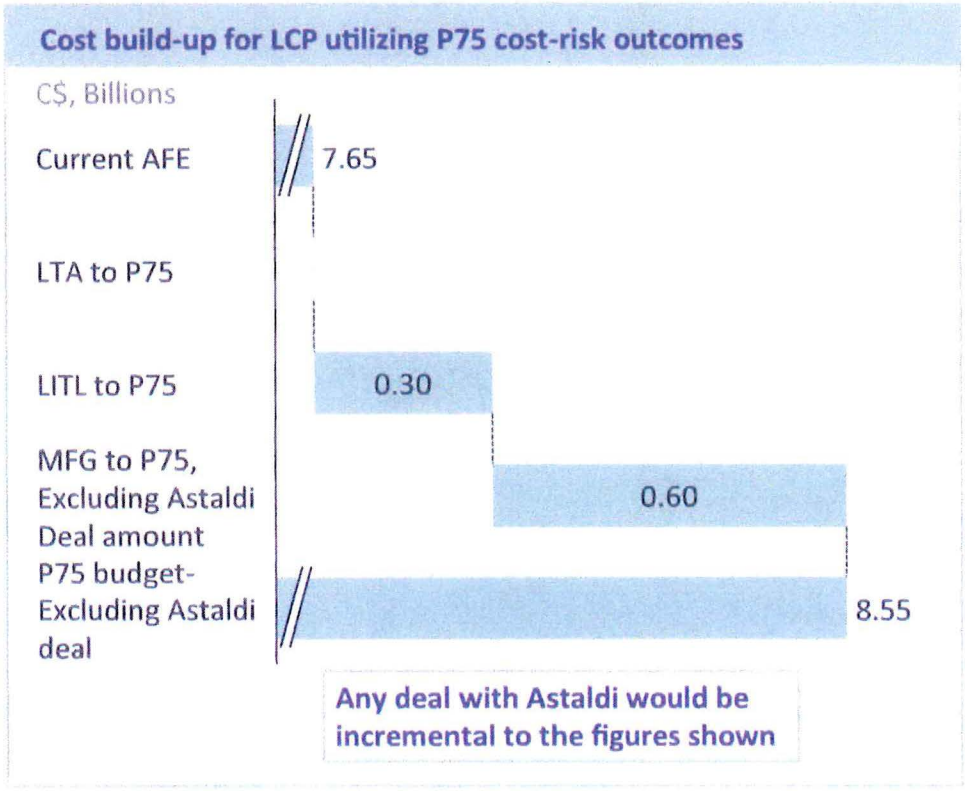
Risk exposure for MFG ~C$800-C$1,100 million (~25-30%) above AFE with Astaldi deal, exposure greater if no deal reached



First power generation is ~14-20 months behind the sanction schedule, greater delay possible with no Astaldi deal



Overall cost requirement to P75 is ~$8.55 billion, plus Astaldi deal



- Budgeting for the P75 cost exposure of C$8.55 billion plus Astladi deal provides a level of certainty to LCP
- Current "likely deal range" with Astaldi is between C$250-450 million

Path forward

- LCP has reached a critical decision point concerning the path forward with Astaldi. Analysis indicates further delays will have a material impact on cost and schedule
- LCP team is prepared to have a comprehensive briefing on Astaldi as soon as convenient

Sharing our ideas in an open and supportive manner to achieve excellence.

Teamwork

Open Communication

Fostering an environment where information moves freely in a timely manner.

Honesty and Trust

Being sincere in everything we say and do.

Relentless commitment to protecting ourselves, our colleagues, and our community.

Safety

Respect and Dignity

Appreciating the individuality of others by our words and actions.

Leadership

Empowering individuals to help, guide and inspire others.

Holding ourselves responsible for our actions and performance.

Accountability

Appendix

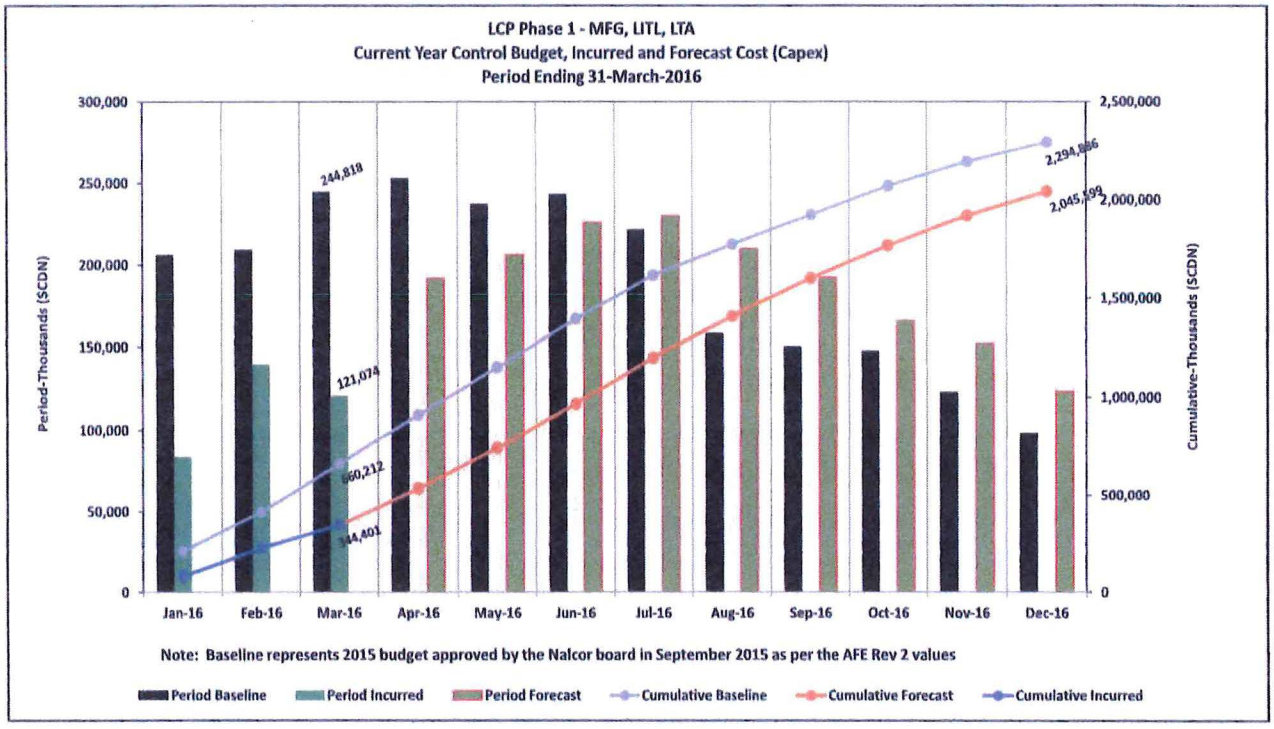
COST SUMMARY REPORT (Millions CAD)

Asset	Baseline DG3	Approved Changes	Current Control Budget (CCB)	Incurred Costs		Final Forecast Cost (FFC)	Variance from CCB
				Current Period	Project-to-Date		
Muskrat Falls Generation	$2,674	$928	$3,602	$59	$2,158	$3,602	$0
Labrador Island Transmission Link (LITL)	$2,523	$480	$3,003	$52	$1,551	$3,044	$41
Labrador Transmission Asset (LTA)	$637	$225	$863	$10	$639	$852	($11)
Pre-Contingency Capital	$5,835	$1,633	$7,468	$121	$4,348	$7,498	$30
Contingency	$368	($182)	$185	$0	$0	$155	(30)
Total Capital	$6,202	$1,450	$7,653[1]	$121	$4,348	$7,653[1]	($0)

[1] Values are within the Authorization for Expenditure (AFE) approved September 2015.

Note: Financing and currency impact costs are reported corporately and excluded from all tables and curves.

2016 ANNUAL COST CURVE

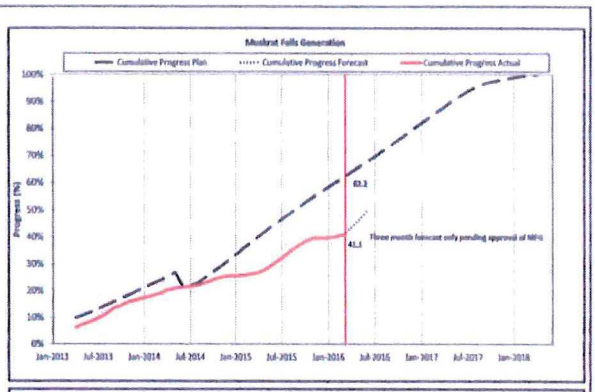


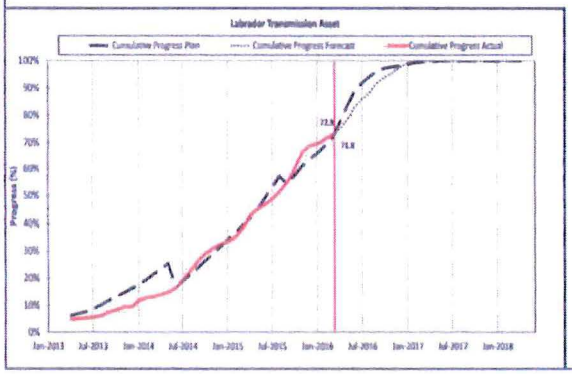
CONSTRUCTION PROGRESS SUMMARY & CURVES

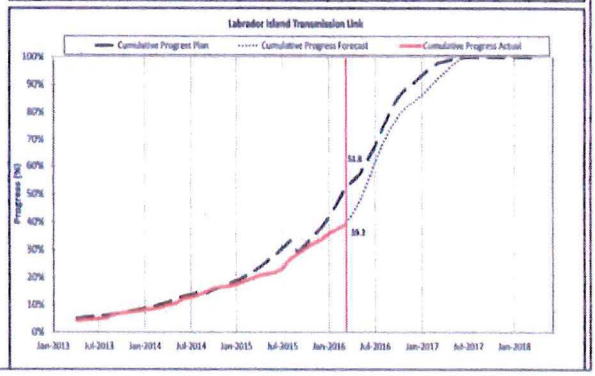
	Plan	Earned
MFG	62.2%	41.1%
LTA	71.8%	72.9%
LITL	51.8%	39.2%
Overall	58.9%	43.9%

Note 1: Cumulative planned progress for LTA/LITL is representative of September 2015 rebaseline

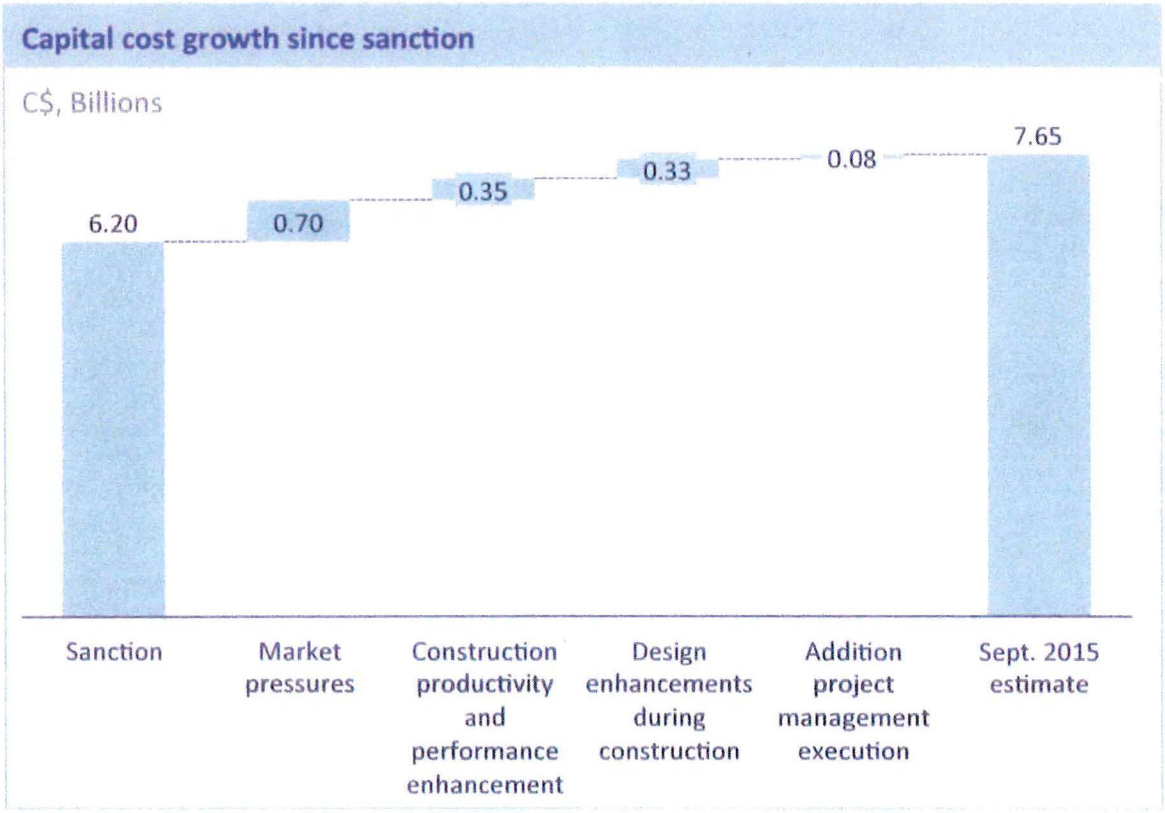
Note 2: Cumulative planned progress for MFG is representative of June 2014 baseline until update available



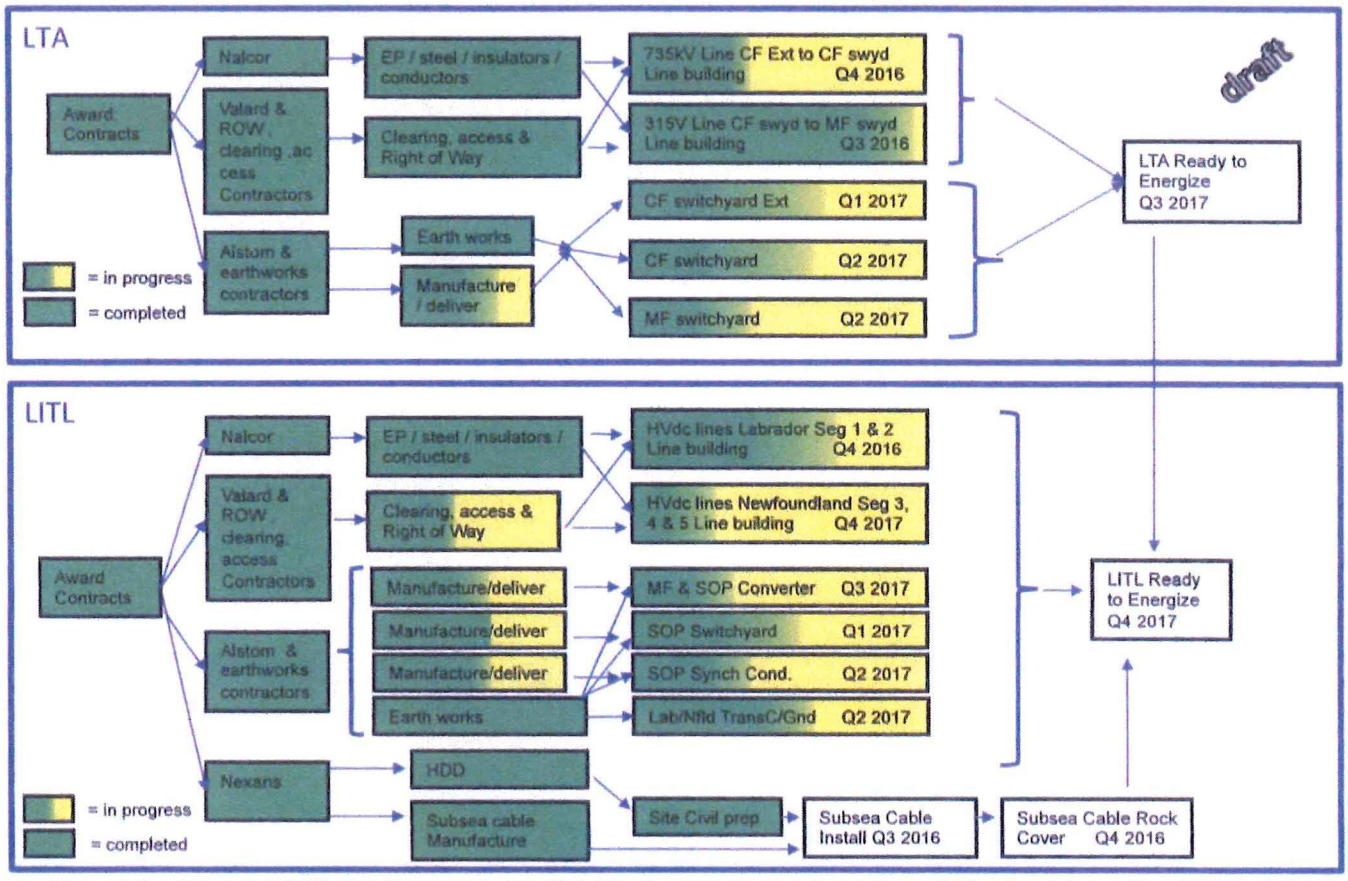




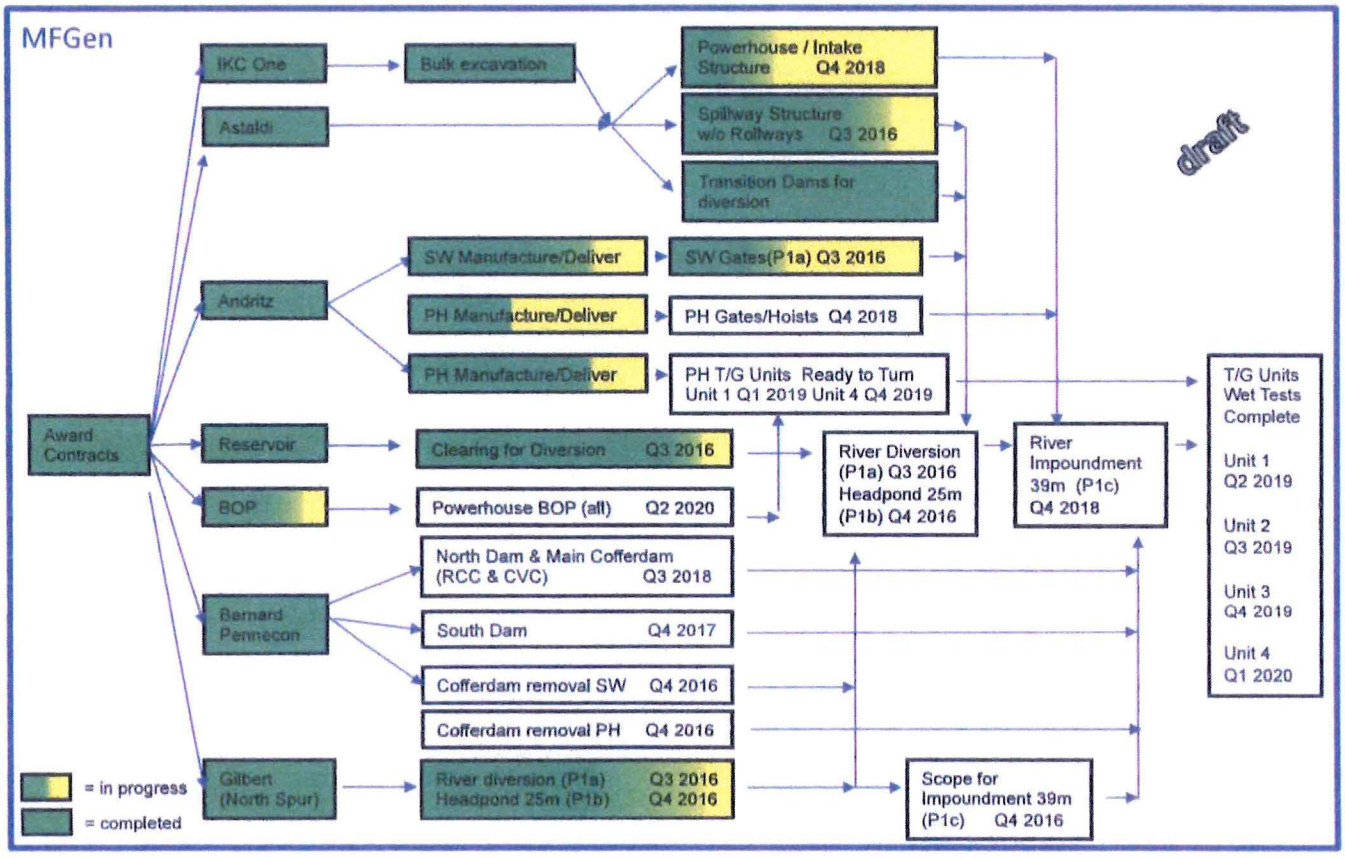
Cost growth to-date driven primarily by market factors



LTA/LITL Logic Diagram - Overview



MFGen Logic Diagram - Overview



LTA-LITL Cost and Schedule Risk Assessment

14-Mar-2016

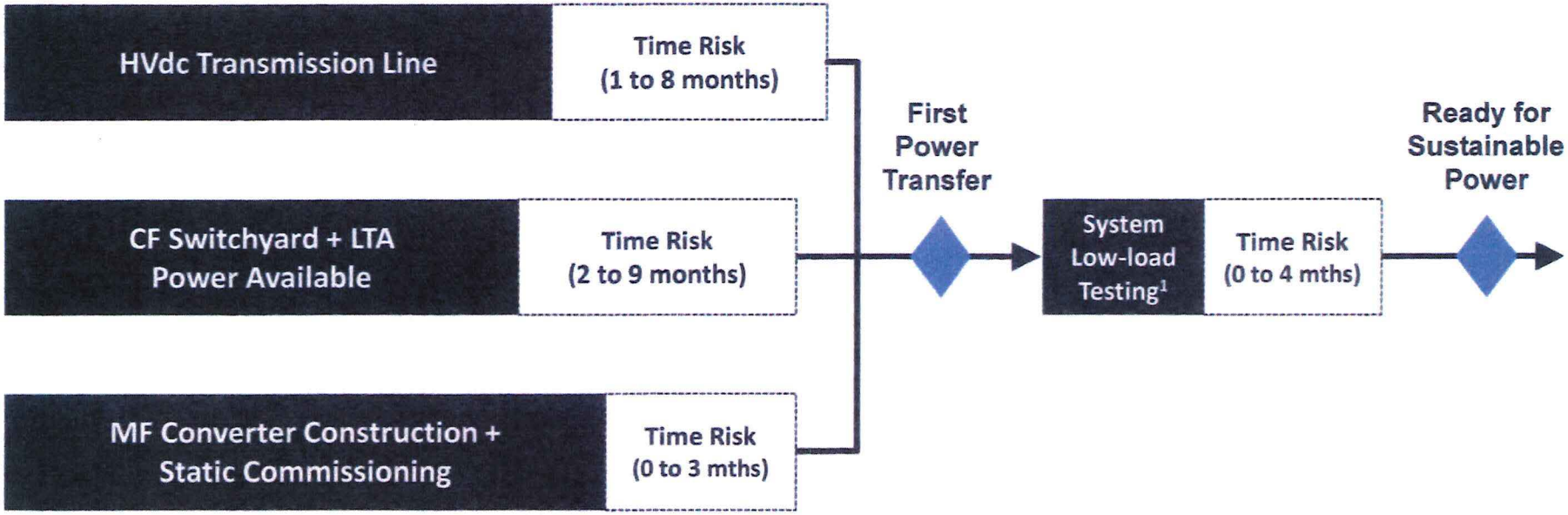
Boundless Energy

nalcor energy
LOWER CHURCHILL PROJECT

Background

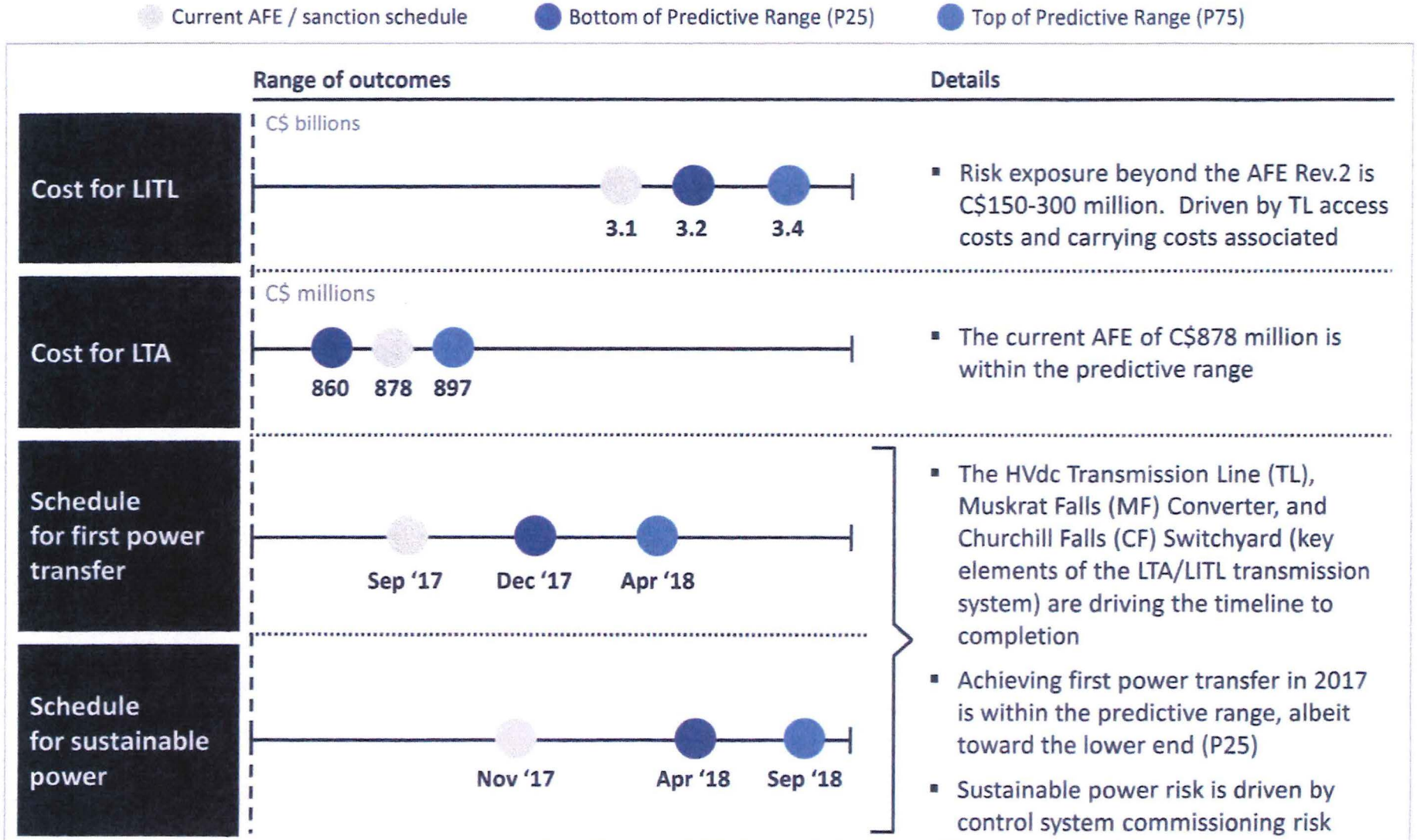
- Westney engaged in December to support LCMC's planned cost and schedule risk assessment ("QRA") for LCP
- QRA broken into 2 separate reports: LTA /LITL and MF

3 separate work streams drive the schedule for LTA/LITL energization and first power transfer from Labrador



[1]System low-load testing with 70 MW block of recall power from Churchill Falls

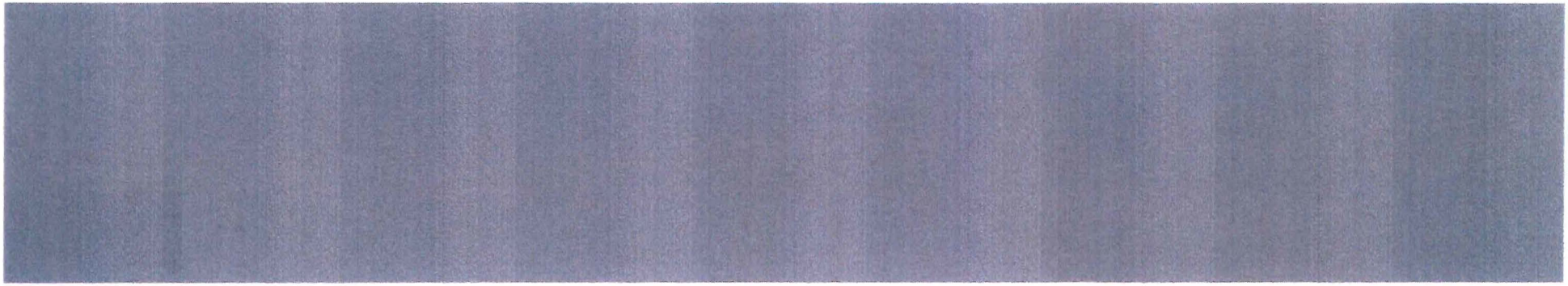
Prediction Ranges for LITL/LTA Cost and Schedule



LITL Major Cost Drivers

Risk	Mean impact C$ millions	Best-worst case C$ millions	Details
Un-risked LITL cost	2,993		▪ AFE Rev.2 less available contingency[1]
A Access for HVdc transmission line	138	110 to 160	▪ Unfunded scope - LRM and Avalon Peninsula ▪ Uncertainty re: winter access in Labrador & Eastern NL and remediation plans post-constr.
B Owner's project costs	97	75 to 116	▪ Carrying costs to maintain team to lengthen schedule plus additional resources to manage underperforming contractors
C Construction of 350 kV HVdc transmission line	19	-6 to 40	▪ Geotechnical conditions requiring more expensive H-piles ▪ Offset by anticipated recovery of partial LDs
D Converters - MF and Soldier's Pond	16	-5 to 35	▪ Open change request (e.g. filters, etc.) and allowances for ECNs driving outlook ▪ Offset by anticipated recovery of partial LDs
E All other risks	59	37 to 80	▪ Reference breakdown of tactical risks
Risk-adjusted LITL cost (P25 to P75)		3,248 - 3,384	

[1]Total amount with contingency is C$3,089 million



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LOWER CHURCHILL PROJECT