July 2013 EXCOM Contract Advisory Committee deck and CEO briefing $7.0B

This deck was focused on the high value contracts and invited commentary on the Project teams strategy and mitigations

July 2013 Final Forecast Cost deck presented by Project team to CEO of ~$7.0B

This deck was providing leadership with some early indications and concerns about the project cap costs, specifically the contractor bids being greater than the budget and estimate developed by SNC at DG3. The contractors assumptions on productivity were significantly misaligned with those used by SNC resulting in much higher contract costs.

The project team identified mitigating actions they were actively taking to drive the bid costs down

Hide Details

Lower Churchill Excomm- Contract Advisory Subcommittee

Wed 07/31/2013 2:30 PM - 3:30 PM

Attendance is **required** for Paul Harrington

Chair:	Natasha Hanlon/NLHydro
Rooms:	LVL3CNF1/Hydro Place@NLHydro
Location:	Hydro Place - Level 3, Conf. room 1

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

Required:	Derrick Sturge/NLHydro@NLHydro, Gilbert Bennett/NLHydro@NLHydro, James Meaney/NLHydro@NLHYDRO, Jason Kean/NLHydro@NLHydro, Jim Keating/NLHydro@NLHydro, John MacIsaac/NLHydro@NLHYDRO, Lance

Description

This session is a preliminary session with the intention of having a standing meeting with the following purpose: To ensure awareness and identification of, whilst sharing advice on, major contract strategies and associated risks and opportunities.

Personal Notes

Slides for tomorrow - Contracts
Lance Clarke to: Paul Harrington, Jason Kean 07/23/2013 03:34 PM

Gents

Thoughts please. I basically took our main contracts for cold eyes and the IE and restricted our review to those. I then tweaked the slides Jason used for the cost forecast as a summary of the general situation and specific discussion on our big three. We will also provide a copy of the package dictionary for each of these contracts and can discuss further desires of the group along with capturing any ideas and opportunities.

Excomm Contracts Subcommittee July 24 2013.pptx

Lance Clarke
Commercial Manager (Consultant)
Nalcor Energy - Lower Churchill Project

Direct Phone: 709-737-1245
Toll Free: 1-888-576-5454 (Canada Only)
Fax: 709-737-1985
Email: lanceclarke@nalcorenergy.com
Website: http://www.nalcorenergy.com

Excomm Contracts Subcommittee

24-Jul-2013

Boundless Energy

nalcor energy

LOWER CHURCHILL PROJECT

Purpose

- Standing meeting with the following purpose: To ensure awareness and identification of, whilst sharing advice on, major contract strategies and associated risks and opportunities for the Lower Churchill.

Pertinent Points

- Bid prices for some Large civil works are high
  - Contractor's view on labor productivity and performance - Long Harbour and Hebron driving the perception
  - Market conditions favour larger margins/profits- especially converters and transmission
  - No/low contractor risk appetite for work in NL
- Equipment Supply cost have been either better or comparable than DG3 estimate

Pertinent Points

- Overall quantities to be installed has remained steady, while the "complexity" of installation has provided challenges
- We are directing attention on how to mitigate this and future exposure by exploring alternate contracting strategies
  - i.e. Risk sharing frameworks with capped exposure
- Complexity of agreement somewhat of a factor

Status of Key Contracts

2. Transmission Line Construction

- HVac bids were higher than DG3 estimate.
- Bid prices reveal significant delta on productivity for tower erection
- Contractor margins beyond typical, reflecting heated market – there are limited contractors who can execute the large, complex scope and they are very busy within N. America – they dictate price
- Contractors are including risk premiums to cover concerns of labour, regulatory, aboriginal, civil works, access and local contractors
- Increase tonnage due to inclusion of tower loading safety margins
- Project Team is exploring alternative risk sharing execution frameworks with major transmission contractors
- Mobilizing additional construction management expertise to the team through specialist Construction Management consultants

Status of Key Contracts

3. HVdc Converters and Transition Compounds

- 3 Bids recently received, higher than budgetary prices .
- The HVdc converter market is very active and the pricing reflects the dominant position that the suppliers currently enjoy
- The contractors view NL as a difficult and expensive place to carry out work and have built in large risk premiums in their bids, plus the civil/local contractors are feeding this with high pricing and productivity concerns
- Despite meetings at Senior levels with the bidders – local contractor civil costs continue to drive up the contract prices disproportionately
- Project is reviewing design and ways to cut scope and overall costs

FFC Deck
Jason Kean to: Paul Harrington 07/23/2013 12:27 PM
Cc: Gilbert Bennett
This message is digitally signed.

Paul,
I have updated the deck to include an additional slide re cost reduction opportunities.

Jason

Final Forecast Cost Update - 22-Jul-2013 - Rev 0.pptx

Jason R. Kean, P. Eng., MBA, PMP
Deputy General Project Manager
PROJECT DELIVERY TEAM
Lower Churchill Project
t. **709 737-1321** c. **709 727-9129** f. **709 754-0787**
e. JasonKean@lowerchurchillproject.ca
w. muskratfalls.nalcorenergy.com

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

Final Forecast Cost Update

Presentation to Executive Management

22-Jul-2013

Boundless Energy

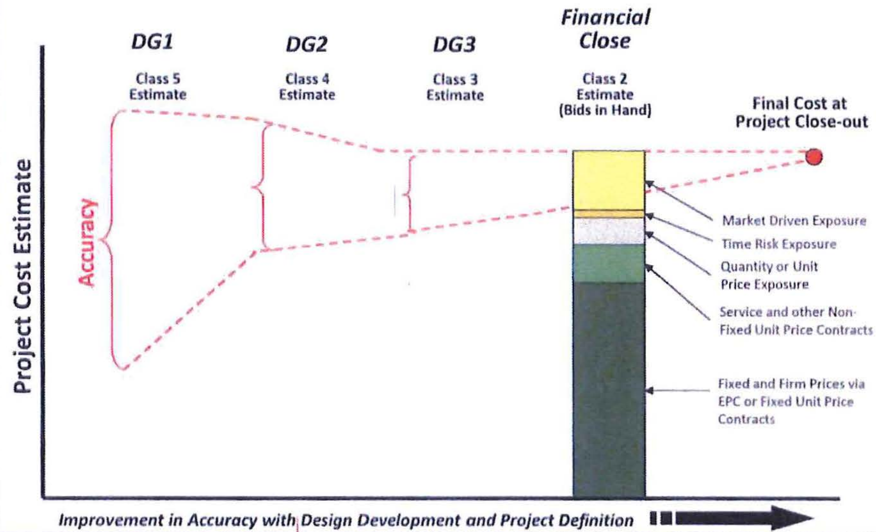
nalcor energy
LOWER CHURCHILL PROJECT

Purpose

- To provide a Management-level with an "indicative" level review of the Final Forecast Cost (FFC) for LCP based on actual contract pricing and applying to upcoming contracts/PO's.
- To outline key mitigations be assessed to manage FFC exposure going forward.

LOWER CHURCHILL PROJECT 2 nalcor energy

DG3 Estimate + 18 Months View: *Actual*



LOWER CHURCHILL PROJECT — nalcor energy

What is Driving the FFC (1/5)

1. **Powerhouse Concrete and Civil Works (i.e. CH-0007)**
   - Our largest contract and will be presented for approval in late August
   - 4 bids received; wide variance in bid prices between N. American and European firms. Focusing negotiations with 2 bidders, however both are beyond DG3 estimate.
   - Approx. 1/3 of FFC delta attributable to design development
   - Balance attributable to contractor risk perception. Contractors view NL as a difficult and expensive place to carry out work, plus the civil/local contractors are feeding this with high pricing and productivity concerns
   - Contractors have concerns with the large quantities of concrete, the availability of labour and the complexity of the undertaking
   - Target Cost Model introduced to facilitate sharing of labour risk
   - Have relaxed diversion window in order to help contractor be successful

LOWER CHURCHILL PROJECT 10 nalcor energy

What is Driving the FFC (4/5)

4. Muskrat Falls Infrastructure

- Many IBA related contracts involved which are proving to be costly and challenging
- Permanent camp is delayed – contractor performance and sub supplier Chapter 11
- Temporary camp and services required because of delays to permanent camp
- Inadequate SLI Construction management required Nalcor intervention and command and control
- Site services have been badly managed by SlI requiring Nalcor intervention at a late stage
- Demonstrations, site disruptions and forest fires have all contributed to loss of productivity, delays and claims from the contractors which are built into the FFC

What is Driving the FFC (5/5)

5. All Other Items Net FFC Impact

- Reflects market premiums for other civil works, incl. North Spur Stabilization, Synchronous Condensers, and Switchyards
- Site Services and CM costs resulting in from movement of First Power from target of mid to end of 2017
- Switch from EPCM to EPC model for Synchronous Condensers and Switchyards
- Removal of Holyrood Synchronous Condenser Conversion Scope
- SOBI Cable crossing savings, incl. reduced route, embedded fibre

FFC Review Basis

- Considers cost reporting up to 30-Jun-2013
- Leverages insights from all RFP submittals received up to same period

Anchoring Back: DG3 Estimate

LCP Phase 1 (Excluding Maritime Link)
DG3 Estimate Summary (millions Jan 2012 CDN $)

	MF	LTA	LITL	Totals
Base Estimate	$2,511.92	$601.31	$2,359.61	$5,472.84
Contingency	$226.69	$54.83	$86.48	$368.00
Escalation Allowance	$162.54	$35.44	$163.66	$361.64
Totals	$2,901.15	$691.58	$2,609.75	$6,202.48
% of Total	46.8%	11.2%	42.1%	100.0%

Deck
Paul Harrington to: Gilbert Bennett 07/22/2013 10:34 AM
Cc: Brian Crawley

Gilbert
I guess you have been tied up at Hydro Place - anyway here is the deck that has been produced for you and Ed

Paul Harrington
Project Director
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

----- Forwarded by Paul Harrington/NLHydro on 07/22/2013 10:33 AM -----

From:	Jason Kean/NLHydro
To:	Paul Harrington/NLHydro@NLHydro,
Cc:	Lance Clarke/NLHydro@NLHydro
Date:	07/22/2013 10:25 AM
Subject:	Re:

Here you go.

JK

Final Forecast Cost Update - 22-Jul-2013 - Rev 0.pptx

Jason R. Kean, P. Eng., MBA, PMP
Deputy General Project Manager
PROJECT DELIVERY TEAM
Lower Churchill Project
t. **709 737-1321** c. **709 727-9129** f. **709 754-0787**
e. JasonKean@lowerchurchillproject.ca
w. muskratfalls.nalcorenergy.com

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

Paul Harrington He seems to be tied up at Hydro Place - do you... 07/22/2013 10:18:51 AM

From: Paul Harrington/NLHydro
To: Jason Kean/NLHydro@NLHydro,
Date: 07/22/2013 10:18 AM
Subject: Re:

He seems to be tied up at Hydro Place - do you have a final version I can send him?

Paul Harrington
Project Director
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

Jason Kean Paul, I'm in the EOC Training. Call me when Gil... 07/22/2013 10:06:06 AM

Re: Ed wants the final forecast cost

Lance Clarke
to:
Paul Harrington
07/22/2013 08:51 AM
Hide Details
From: Lance Clarke/NLHydro
To: Paul Harrington/NLHydro
Paul

I sat with Jason and reviewed the deck. I have added a mitigations slide with him. With Ed it is important we bring solutions so we have stressed the things we are doing and will have to continue to do to lower our exposure and hopefully bring the costs below the FFC and closer to our original numbers. Bottom line is that it is the local hot market we are fighting as you know. What I do know is that we cannot give in.

Rgds

On 2013-07-22, at 8:07 AM, "Paul Harrington" <PHarrington@lowerchurchillproject.ca> wrote:

> Lance
> Gilbert called and ed wants the FFC - Jason has a deck ready -pls check asap with him
>
> **Paul Harrington**
> **Project Director**
> **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
>
>

Re:
Jason Kean to: Paul Harrington 07/22/2013 10:25 AM
Cc: Lance Clarke
This message is digitally signed.

History: This message has been forwarded.

Here you go.

JK

Final Forecast Cost Update - 22-Jul-2013 - Rev 0.pptx

Jason R. Kean, P. Eng., MBA, PMP
Deputy General Project Manager
PROJECT DELIVERY TEAM
Lower Churchill Project
t. **709 737-1321** c. **709 727-9129** f. **709 754-0787**
e. JasonKean@lowerchurchillproject.ca
w. muskratfalls.nalcorenergy.com

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

Paul Harrington He seems to be tied up at Hydro Place - do you... 07/22/2013 10:18:51 AM

From: Paul Harrington/NLHydro
To: Jason Kean/NLHydro@NLHydro,
Date: 07/22/2013 10:18 AM
Subject: Re:

He seems to be tied up at Hydro Place - do you have a final version I can send him?

Paul Harrington
Project Director
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

Jason Kean Paul, I'm in the EOC Training. Call me when Gil... 07/22/2013 10:06:06 AM

Final Forecast Cost Update

Presentation to Executive Management

22-Jul-2013

Boundless Energy

nalcor energy

LOWER CHURCHILL PROJECT

Purpose

- To provide a Management-level with an "indicative" level review of the Final Forecast Cost (FFC) for LCP based on actual contract pricing and applying to upcoming contracts/PO's.
- To outline key mitigations be assessed to manage FFC exposure going forward.

LOWER CHURCHILL PROJECT 2 nalcor energy

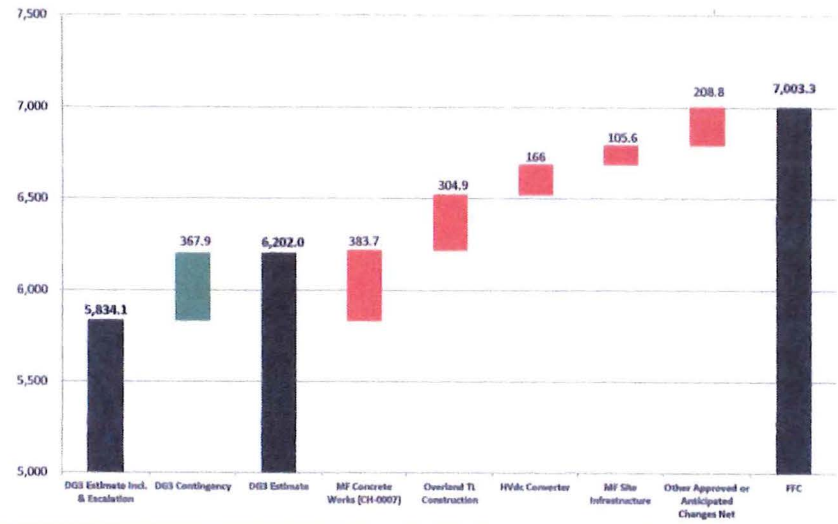
Key Messages (1/2)

- We are forecasting the FFC to be ~$7.0B which is 12% beyond the DG3.
  - The FFC includes some contingency allowance
  - Several strategic actions have and will be taken to mitigate this exposure
- Bid prices for civil works are high
  - Contractor's view on labor productivity and performance - Long Harbour and Hebron driving the perception
  - Market conditions favour larger margins/profits- especially converters and transmission
  - No/low contractor risk appetite for work in NL

Key Messages (2/2)

- Cash flow has shifted out since DG3 – uncertain of impact on overall In-Service Cost
- Equipment Supply cost have been either better or comparable than DG3 estimate
- Overall quantities to be installed has generally remained steady
- CDN $ weakening against USD, however not seen as large exposure
- We are directing attention on how to mitigate this and future exposure

Key Influencers on FFC



Mitigating Actions

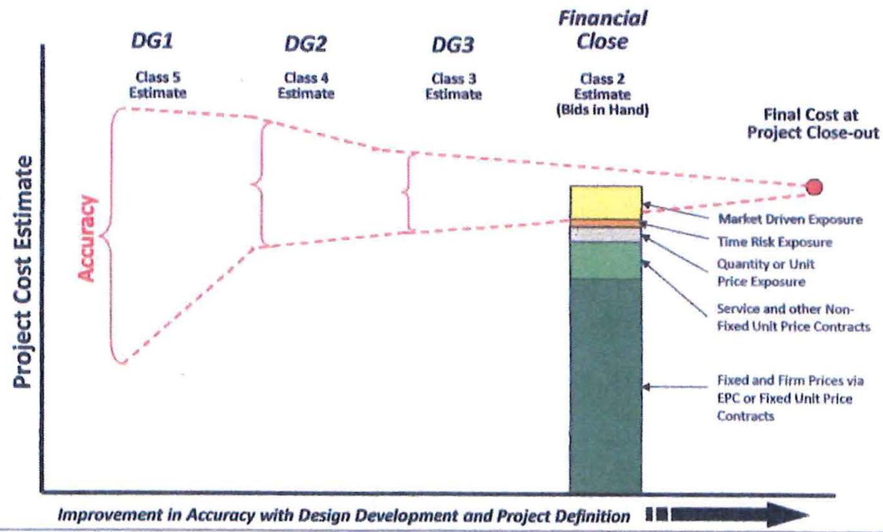
- Evaluating alternate contracting models
  - E.g. partnership arrangement for transmission construction
- Alternate commercial models
  - Target price and KPIs
- Expand local civil contractor market
- Finding ways to avail of our good labor agreements
- Optimizing construction schedule
- Mitigating areas of potential change order exposure
  - Transmission material availability and issue
- Reviewing contract risk transfer strategies
  - Are we getting what we are paying for?

Exposure if Mitigations are Successful

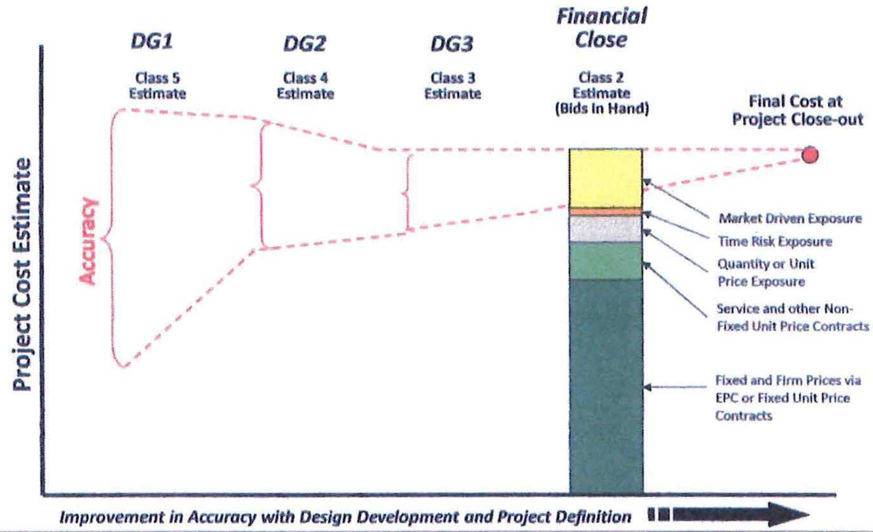
- Potential reduction in FFC by ~$200 million
  - Reduce TL construction exposure by $100 million
  - Reduce Converter exposure by $50 to $100 million

- FFC would be reduced to $6.8 B.

DG3 Estimate + 18 Months View: *Expected*



DG3 Estimate + 18 Months View: *Actual*



What is Driving the FFC (1/5)

1. **Powerhouse Concrete and Civil Works (i.e. CH-0007)**
   - Our largest contract and will be presented for approval in late August
   - 4 bids received; wide variance in bid prices between N. American and European firms. Focusing negotiations with 2 bidders, however both are beyond DG3 estimate.
   - Approx. 1/3 of FFC delta attributable to design development
   - Balance attributable to contractor risk perception. Contractors view NL as a difficult and expensive place to carry out work, plus the civil/local contractors are feeding this with high pricing and productivity concerns
   - Contractors have concerns with the large quantities of concrete, the availability of labour and the complexity of the undertaking
   - Target Cost Model introduced to facilitate sharing of labour risk
   - Have relaxed diversion window in order to help contractor be successful

What is Driving the FFC (2/5)

2. Transmission Line Construction

- HVac bids were 30% higher than DG3 estimate. Trend included for HVdc in FFC.
- Bid prices reveal significant delta on productivity for tower erection
- Contractor margins beyond typical, reflecting heated market – there are limited contractors who can execute the large, complex scope and they are very busy within N. America – they dictate price
- Contractors are including risk premiums to cover concerns of labour, regulatory, aboriginal, civil works, access and local contractors
- Increase tonnage due to inclusion of tower loading safety margins
- Project Team is exploring alternative risk sharing execution frameworks with major transmission contractors
- Mobilizing additional construction management expertise to the team through specialist Construction Management consultants

What is Driving the FFC (3/5)

3. HVdc Converters and Transition Compounds

- 3 Bids recently received, all of which are significantly higher than budgetary prices each provided for DG3. Lowest bid included in FFC.
- The HVdc converter market is very active and the pricing reflects the dominant position that the suppliers currently enjoy
- The contractors view NL as a difficult and expensive place to carry out work and have built in large risk premiums in their bids, plus the civil/local contractors are feeding this with high pricing and productivity concerns
- Despite meetings at Senior levels with the bidders – local contractor civil costs continue to drive up the contract prices disproportionately
- Project is reviewing design and ways to cut scope and overall costs

What is Driving the FFC (4/5)

4. **Muskrat Falls Infrastructure**
   - Many IBA related contracts involved which are proving to be costly and challenging
   - Permanent camp is delayed – contractor performance and sub supplier Chapter 11
   - Temporary camp and services required because of delays to permanent camp
   - Inadequate SLI Construction management required Nalcor intervention and command and control
   - Site services have been badly managed by SlI requiring Nalcor intervention at a late stage
   - Demonstrations, site disruptions and forest fires have all contributed to loss of productivity, delays and claims from the contractors which are built into the FFC

What is Driving the FFC (5/5)

5. **All Other Items Net FFC Impact**
   - Reflects market premiums for other civil works, incl. North Spur Stabilization, Synchronous Condensers, and Switchyards
   - Site Services and CM costs resulting in from movement of First Power from target of mid to end of 2017
   - Switch from EPCM to EPC model for Synchronous Condensers and Switchyards
   - Removal of Holyrood Synchronous Condenser Conversion Scope
   - SOBI Cable crossing savings, incl. reduced route, embedded fibre

Bid Prices incl. some amount of Strategic Risk Exposure

Performance Risk Exposure

The performance rates /norms and indirect estimates used in the estimate, including the estimate contingency, are based upon historical performance for similar hydro-projects and are predicated upon achieving the envisioned labor strategy and rare much better than what is being experience in Long Harbour (restrictive work practices). Contractor mark-ups for unit price agreements could be excessive if there is a perception risk that the labor strategy will not materialize.

Experience front-line supervision, a key to performance, is now a world market and will likely experience high demand during this project.

Competition for Resources

The estimate for MF is based upon the labor rates in the Hebron Agreement. Given that the total project has approx. 18 million person-hours of labor requirements (including Owner + PMT + Services), it is likely to compete with Western Canada for labor. The wages used for estimating are slightly lower than Western Canada, but NL have larger union premiums resulting in lower take-home compensation. In addition completion bonus are planned for Western Canada.

Escalation allowance assumes between 3 and 3.5% annual increase in labor cost.

Schedule Risk Exposure

There is a potential time or schedule risk exposure for beyond the plan due to the weather and volume of work in the powerhouse. The current schedule for MF assumes achievable performance in the powerhouse concrete, however the sustainability of the required production rates for placement of the ~460,000 m3 of concrete through-out several winters will be challenging.

Maintaining a October 2012 start of Bulk Excavation is considered critical to maintain the overall program.

Supplemental Information

nalcor energy
LOWER CHURCHILL PROJECT

FFC Review Basis

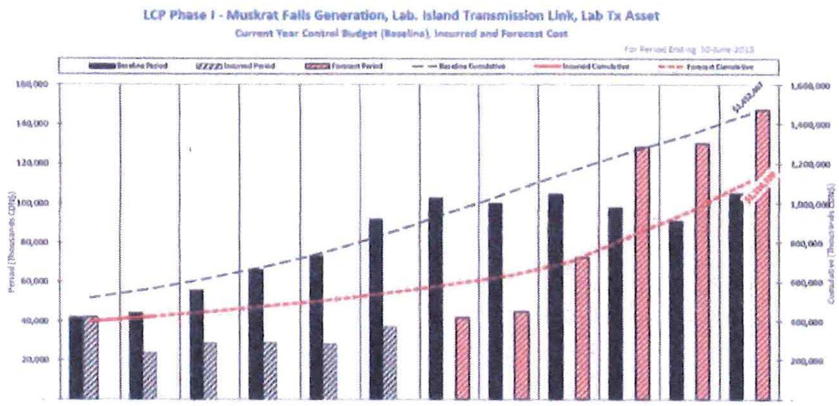
- Considers cost reporting up to 30-Jun-2013
- Leverages insights from all RFP submittals received up to same period

Anchoring Back: DG3 Estimate

LCP Phase 1 (Excluding Maritime Link)
DG3 Estimate Summary (millions Jan 2012 CDN $)

	MF	LTA	LITL	Totals
Base Estimate	$2,511.92	$601.31	$2,359.61	$5,472.84
Contingency	$226.69	$54.83	$86.48	$368.00
Escalation Allowance	$162.54	$35.44	$163.66	$361.64
Totals	$2,901.15	$691.58	$2,609.75	$6,202.48
% of Total	46.8%	11.2%	42.1%	100.0%

Expenditures & Progress Significantly Lag DG3 Plan



Period	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
Baseline (OCB)	41,942	44,291	56,040	66,374	74,455	91,796	102,972	100,578	104,808	98,099	91,041	105,069
Incurred	41,915	23,667	28,541	29,096	28,140	36,684	-	-	-	-	-	-
Forecast							41,976	44,966	72,761	128,614	130,477	147,239
Cumulative	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
Baseline (OCB)	518,163	562,454	618,474	684,848	758,504	850,100	953,072	1,053,450	1,158,258	1,256,357	1,347,398	1,452,467
Incurred	398,370	422,236	450,777	479,853	508,053	544,737	-	-	-	-	-	-
Forecast							586,713	631,679	704,440	833,054	963,481	1,110,720

Note 1: OCB = Original Control Budget reflects Nalcor Energy LCP's DG3 Approved Capital Budget

LOWER CHURCHILL PROJECT 19

nalcor energy

nalcor energy
LOWER CHURCHILL PROJECT