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Subject: FFC Deck
Date: Tuesday, July 23, 2013 12:27:07 PM
Attachments: [.png](#)
[Final Forecast Cost Update - 22-Jul-2013 - Rev 0.pptx](#)

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

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PROJECT DELIVERY TEAM

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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



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.

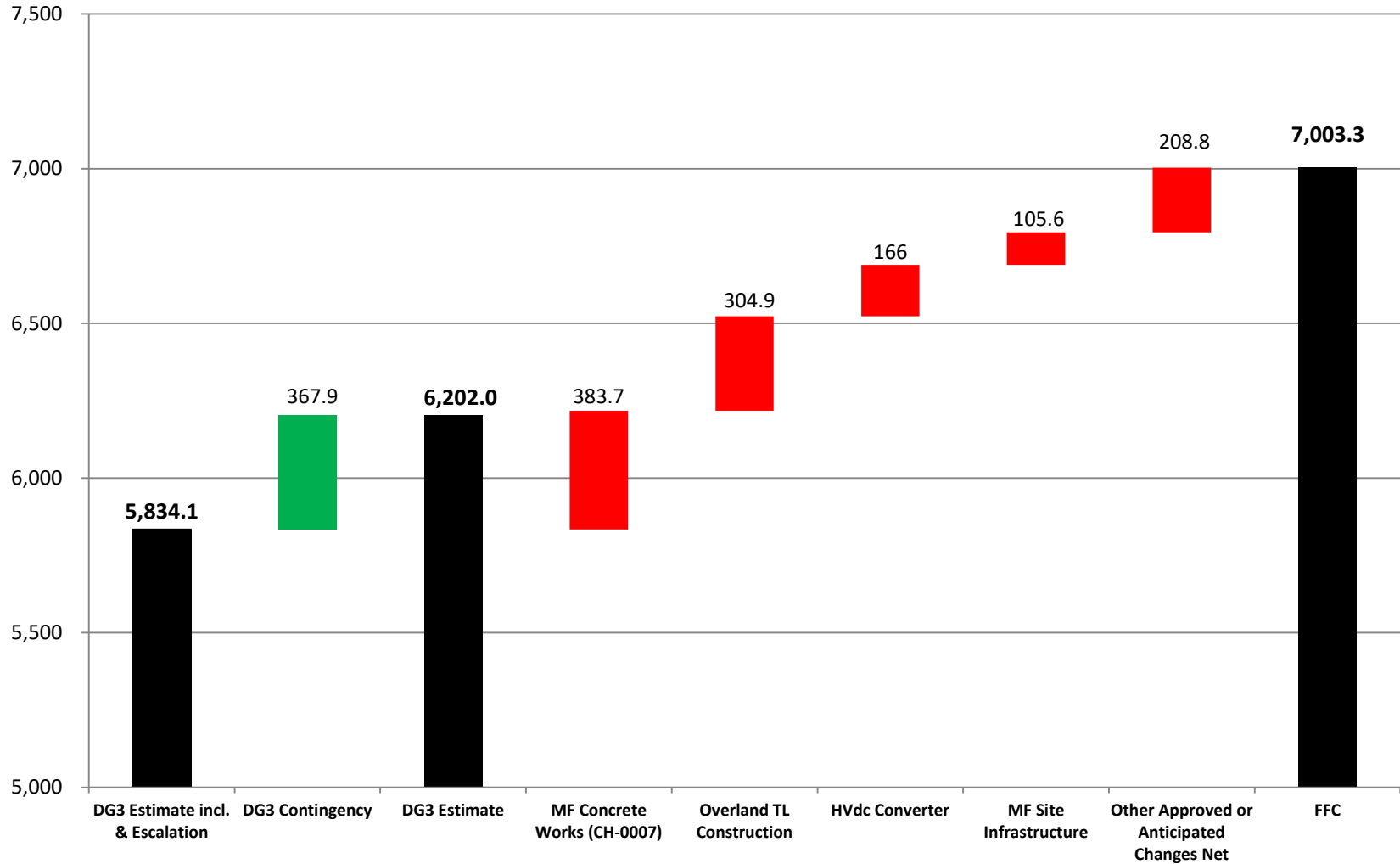
Key Messages (1/2)

- 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



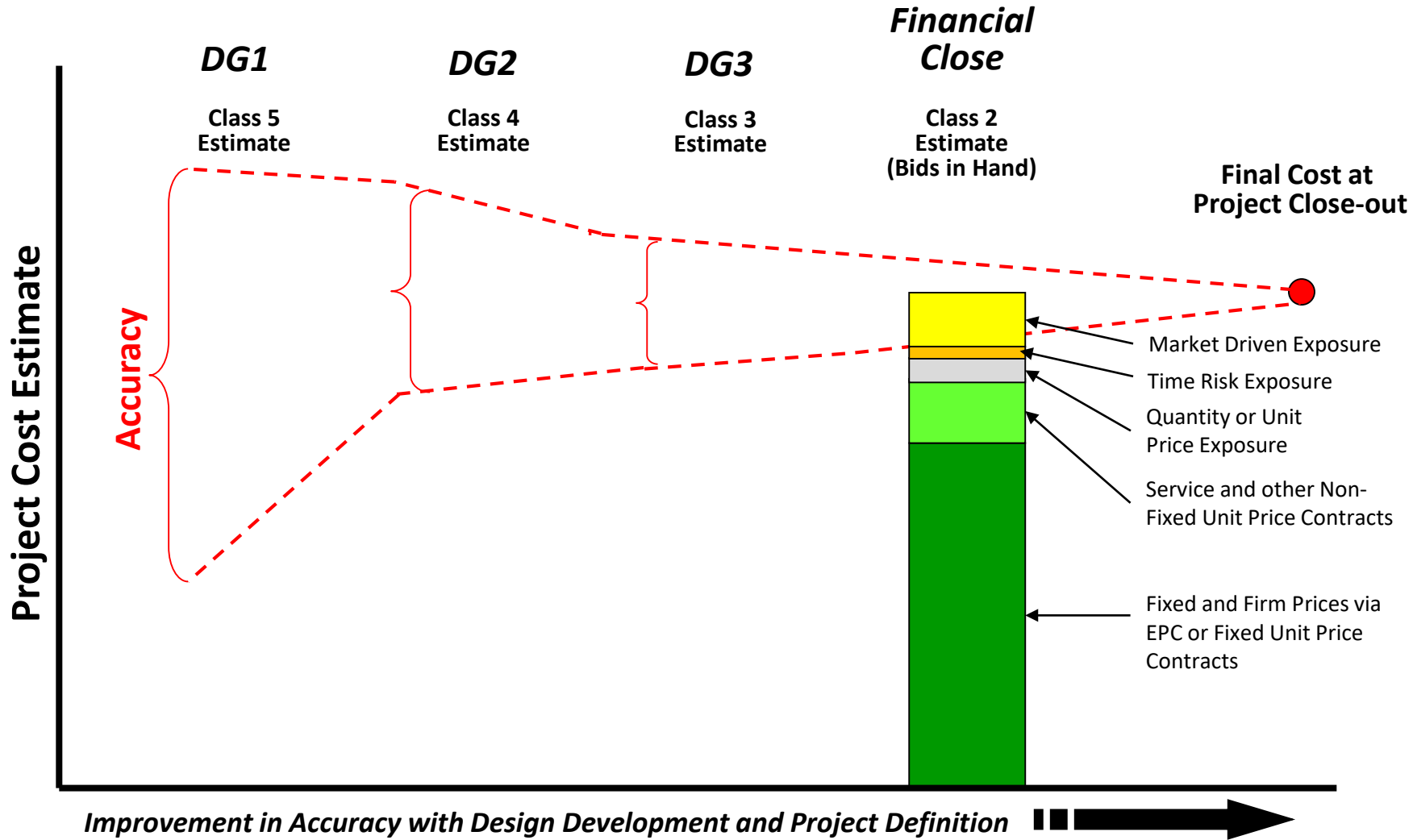
Mitigating Actions

- 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?

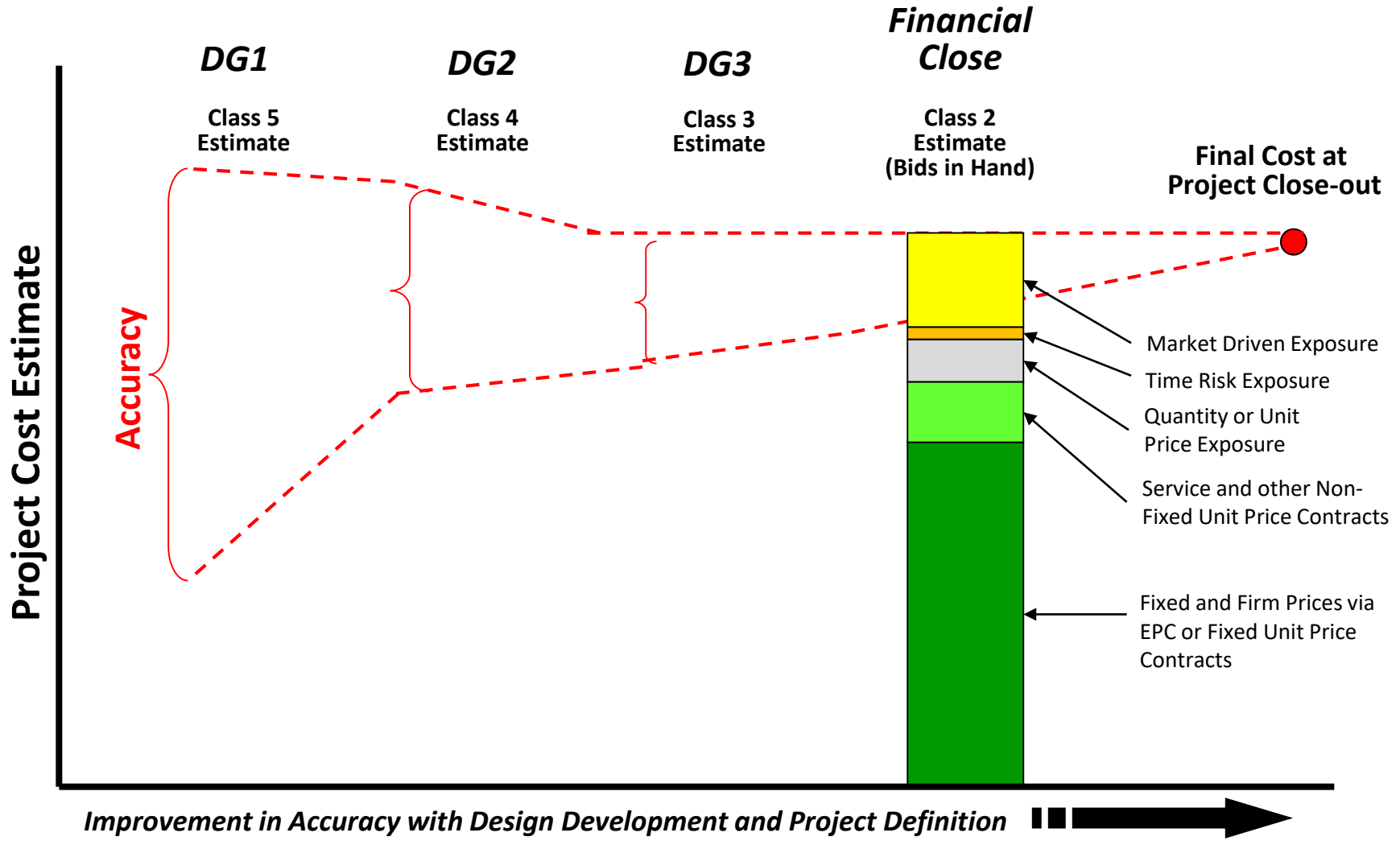
Exposure if Mitigations are Successful

- 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 SII Construction management required Nalcor intervention and command and control
- Site services have been badly managed by SII 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



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

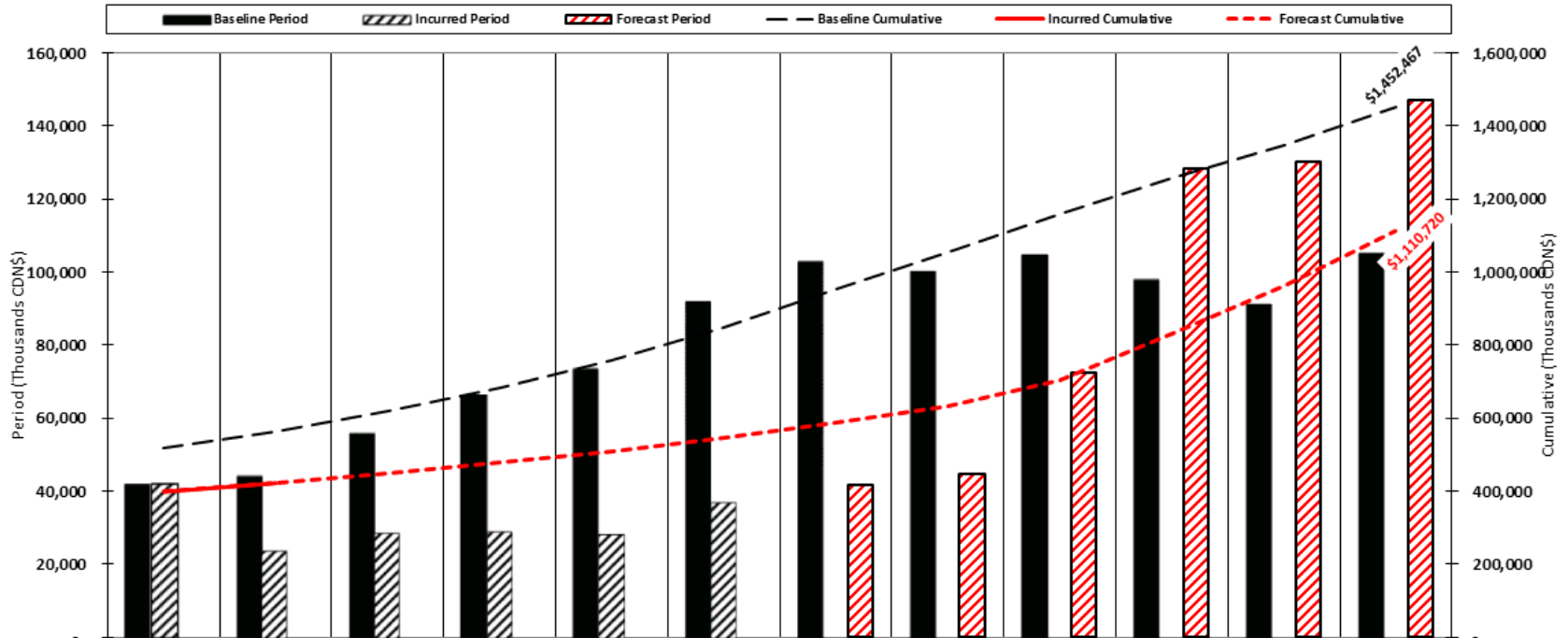
**LCP Phase 1 (Excluding Maritime Link)
DG3 Estimate Summary (millions Jan 2012 CDN \$)**

| | 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

LCP Phase I - Muskrat Falls Generation, Lab. Island Transmission Link, Lab Tx Asset
Current Year Control Budget (Baseline), Incurred and Forecast Cost

For Period Ending: 30-June-2013



| 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) | 41,962 | 44,291 | 56,040 | 66,374 | 73,456 | 91,796 | 102,972 | 100,378 | 104,808 | 98,099 | 91,041 | 105,069 |
| Incurred | 41,915 | 23,867 | 28,541 | 29,036 | 28,240 | 36,684 | - | - | - | - | - | - |
| Forecast | - | - | - | - | - | - | 41,976 | 44,966 | 72,761 | 128,614 | 130,427 | 147,239 |
| Cumulative | | | | | | | | | | | | |
| Baseline (OCB) | 518,143 | 562,434 | 618,474 | 684,848 | 758,304 | 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 | 479,813 | 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

