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**Subject:** Deck re Project Costs  
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**Attachments:** [...png](#)  
[Project Update to MWH - 6-Nov-2013.ppt.pptx](#)

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All,

Attached is the deck inclusive of some slides re the specific growth items.

Photos to come in the AM.

JK



Project Update to MWH - 6-Nov-2013.ppt.pptx

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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?

**Draft**

# Project Update

6-Nov-2013

Boundless Energy



*Confidential and Commercially Sensitive*



# Agenda

- Safety Moment
- Background Information
- Value Update
  - Cost
  - Revenue
  - Quality
  - Status update from DG3

# Background Information

- Project Engineering >90% complete
  - Detailed engineering completed by year end
- Procurement
  - ~2/3 of total value awarded/ready to be awarded
  - LNTP issued for both major MF civil works and hydro mechanical equipment
  - Award of AC transmission line construction imminent
- Construction
  - Productivity generally aligned with expectations
  - Bulk excavation critical milestone achieved

# Background Information

- Safety
  - Relentless commitment to safety
  - Positive safety culture emerging at work sites
  - ~4.0 million person hours worked, 1 LTI
- Quality
  - Positive geotechnical conditions combined with prudent execution resulting in high quality excavated surfaces
  - Design progression has resulting in selective enhancements to improve overall reliability
  - Infrastructure enhancements implemented to drive labour productivity

# Background Information

- Labour
  - Collective agreements negotiated and implemented
  - Project workforce = 1,500. No issues with recruitment
- Aboriginal
  - IBA procurement commitments exceeded
  - >100 Innu working on site
  - 20% of Labrador workforce = aboriginal
- NL and Canadian Benefits
  - NL engineering commitments satisfied
  - 76% of project workforce = NL residents
  - 20% NL workforce = female

# Components of Project Value

- Overall project value is a function of revenue, cost, quality/reliability, schedule
- Costs are comprised of three main categories:
  - Facilities capital (incl. in CPW analysis)
  - Operating costs (incl. in CPW analysis)
  - Financing costs (incl. in CPW analysis)
- Revenue comprised of:
  - PPA revenue (incl. in CPW analysis)
  - value from excess power sales and other storage/transmission opportunities (not incl. in CPW analysis)

# Status Update from DG3

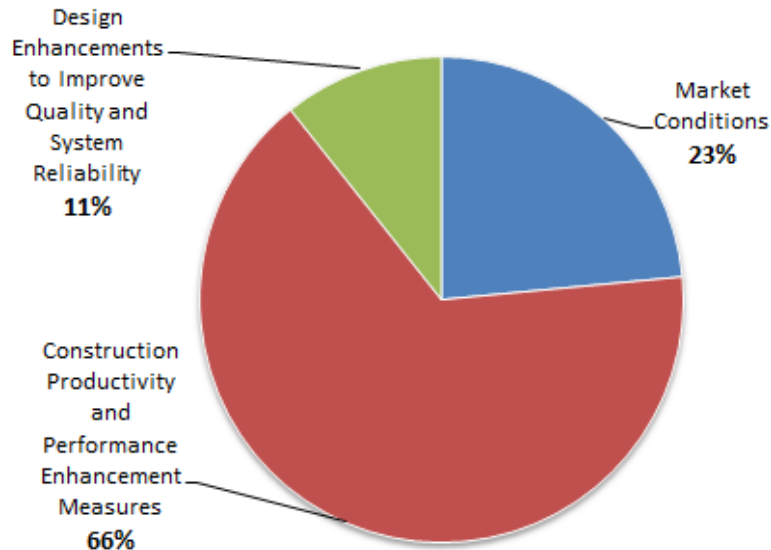
- Facilities capital cost (+5%) ~ + \$300mm
- Financing costs (NPV) ~ - \$300mm
- Excess sales/other value ~ + \$100mm
- Quality/Reliability
  - enhanced from DG3
- Schedule
  - 2017 power achievable
  - Focus continues on optimization for resource leveling and execution effectiveness



# Capital Cost Update

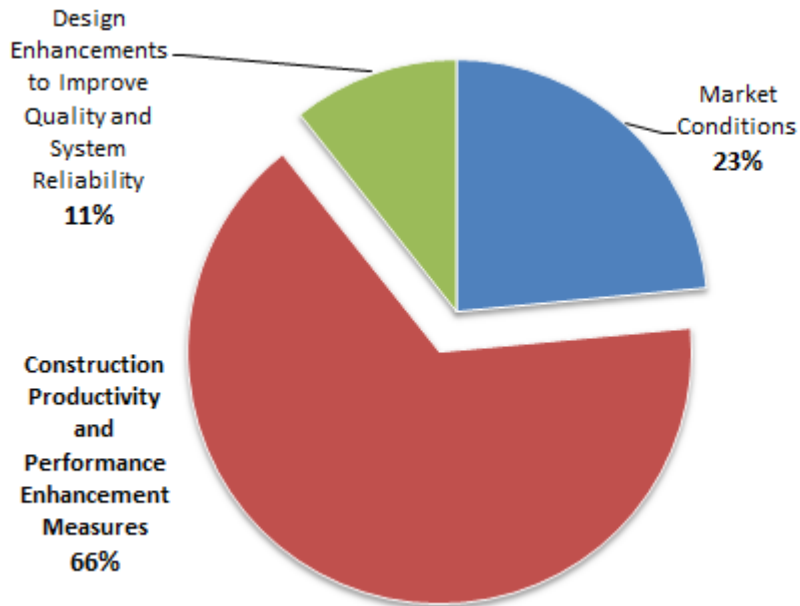


# Cost Growth – 3 Categories



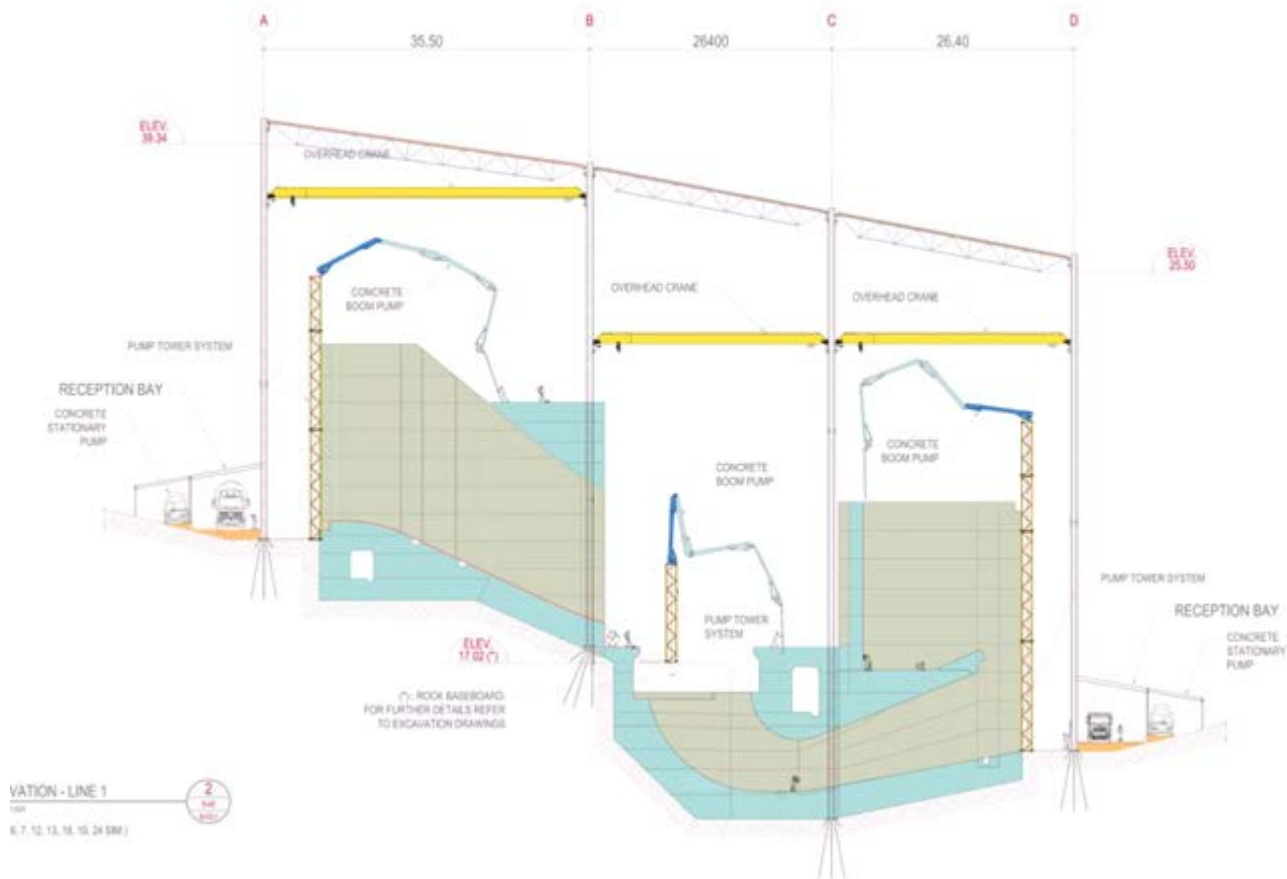
- >2/3 of total cost growth used in investments related to Construction Productivity and Performance Enhancement in order to reduce Project's overall risk profile
- Significant investment in design enhancements to improve system reliability
- Market Conditions reflective of current buoyant local / national market.

# Category 1: Construction Productivity and Performance Enhancement Measures

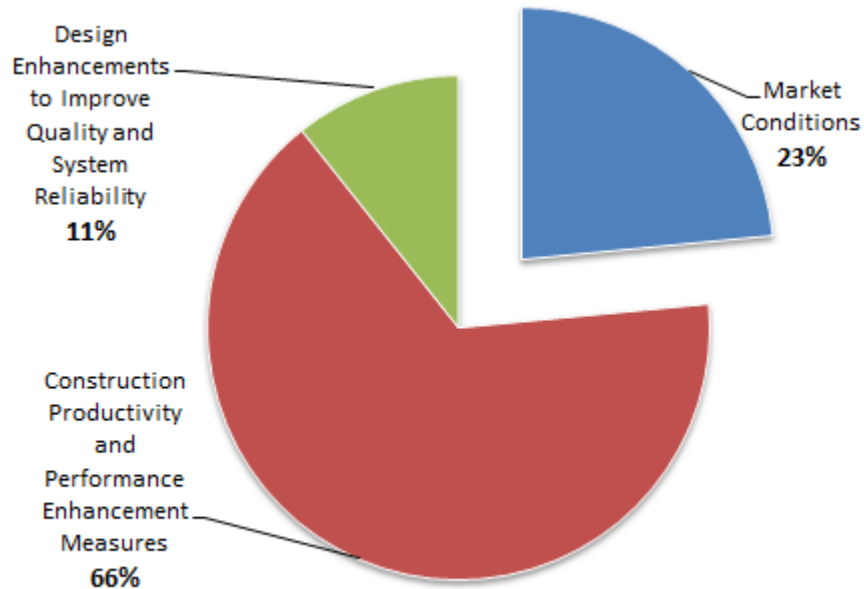


- Strategic investments include:
  - All-weather enclosure over the powerhouse and intake for construction
  - Enhanced camp and recreational complex
  - Early mobilization of starter camp to support Bulk Excavation
  - Change diversion window from 2015 to 2016 to reduce risk on spillway construction
  - Significant site infrastructure upgrades – e.g. laydown area expansion

# Astaldi's Integrated All-Weather Cover System

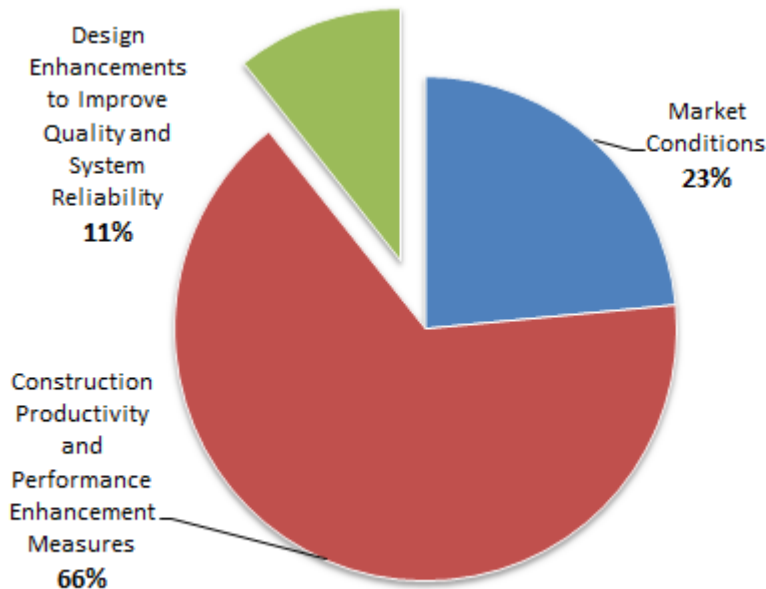


## Category 2: Market Conditions



- We are seeing increased contractor margins and risk premiums
- Driven in-part due to contractor's negative views on labor productivity and performance as experienced at Long Harbour
  - E.g. TL tower assembly and erection
- Equipment and material supply cost have been either better or comparable than DG3 estimate

# Category 3: Design Enhancements to Improve Quality and System Reliability



- Substantiate design enhancements:
  - Use of 5 low-level vertical gates in spillway
  - Spillway discharge channel concrete liner
  - North Spur cut-off wall extension
  - Additional operational spares
  - Addition of 2<sup>nd</sup> service bay on North Side of Powerhouse
  - Use of low temperature steel for HVdc TL
  - Additional foundation corrosion protection on TL
  - Higher utilization factor for AC TL towers

# Minimizing Further Cost Growth

- Lump sum or unit price contracts
  - Contractor holds performance risk
- Category 1 investments to reduce execution risk (Schedule, labor, infrastructure)
- Capped labor exposure with Astaldi using Lmax
- Framework negotiated with Astaldi to expand scope to include N. Spur and Dams
  - Target Price reduces by \$40 million
  - Home overhead, Indirect and equipment cost covered within CH0007
  - Fixed Profit
- Expanding the traditionally local civil subcontractor marketplace for EPC contractors to avail of

# Execution Risk Update

- No new risks –actively managed all open risks
- Contractor Performance Risk
  - Tier 1 contractors identified through comprehensive prequalification and bid evaluation
  - Significant risk transfer to contractor through fixed and firm or unit price arrangements
  - Hard commitments from contractors for A-Team.
- Labor Risk
  - Positive experience to-date – no major issues foreseen
- Integration Risk
  - Strong Project Delivery Team in-place leveraging best resources for the work



# Backup Material



# Benefits of value enhancement decision making

- Increased reliability in transmission line construction beyond initial design return period expectations
- Increased reliability = revenue certainty
- Enclosure of Powerhouse, parts of spillway to provide safer working conditions, increased productivity, longer continued employment opportunities for workforce
- Strategic and select use of alternative commercial models – Target price and KPIs

# Benefits of value enhancement decision making

- Surplus
- Export sales
- Net benefits analysis