

IPA Pacesetter Evaluation of LCP - June 2008  
Review Findings and Observations - Gap Closure Plan

Updated: 30-August-10

Item No.	Area	Finding / Observation	Slide Ref	Recommendation	Definitive Action to be Taken Prior to Gate 2b	Action Lead	Target Completion Date	Comment / Details	Status (Open/Closed)
1	Business Objectives	Business objectives summarized in project charter but lacked: - Economic goals - Documented cost-versus-schedule trade-offs - Costs for alternative scopes	10	Complete required economic deliverables and recast business and project objectives – To understand project’s drivers, economics and power market constraints need to be understood – Otherwise scope cannot be closed, and if project continues without closed scope, resources will be inefficiently used – Without detailed business and project objectives, team will not develop into an aligned and functional group	1.)Ensure business objectives are documented, communicated and understood within the project team.  2.) Separated out into new item #38  3.) Communicate appropriate level of results of economic modeling to LCP Team.	P. Harrington	30-Sep	Target town hall session to explain the term sheet process as well as the general flow of events to conclusion of PPAs and Financial Close.  Met with Commercial team and Engineering Leads to explain the Market and Financial activities needed to get to Gate 2b.  <u>August 30/10 Comments</u> <i>Project Charter revised to reflect clarity on linkage of project objectives to business objectives. The project "steering committee" concept as well as weekly Power Sales and Market Access activities meetings chaired by the Gatekeeper with attendance by the LCP PM help to facilitate alignment. The Project Manager is able to anticipate strategy changes and work to fully ensure timely alignment of the Project Team.</i>	CLOSED
2	Estimate	Despite qualitative information and mega project history, IPA could not produce reliable cost and schedule benchmarks	23		1.) Seek other 3rd party benchmarks for the LCP.  2.) Separated out into new item #39  3.) Attend Statnett seminar on NordNed lessons learned.	All PMT (Item 1)  J. Kean w/D. Pardy (Item 2)  P. Harrington (Item 3)	31-Oct	1.) Some data recieved from Manitoba Hydro (Limestone Project). Suggest sourcing additional data from Landsvirkjun.  3) NorNed Seminar attended - lessons learned to be distributed. Jan Erik Skaug of Statnett in St. John's office for 2 days and reviewed with team.  <u>August 30/10 Comments</u> <i>The MF cost estimate has been developed based upon the extensive cost and schedule estimating work completed for Gull Island for which components has recieved significant amounts of 3rd party review to validate.</i>	CLOSED
3	Risks	Lower Churchill Project is not located in Alberta, but its ability to succeed is linked to the Alberta market	37		Ensure the Alberta competition factor is consider in Phase 2 LCP labor relations strategy.	L. Clarke w/D. Molloy	31-Oct	Labor modeling for project has been undertaken with consideration of other projects planned / underway in NL.  Overall Labour Relations Strategy has taken considerable input from Alberta market, including labor agreements, accommodations, wages, etc. in order to fully understand what it takes to be competitive.	CLOSED
4	Schedule	Entering field with incomplete engineering results in escalating costs and schedule slip	45	Be mindful of lessons learned from Alberta – Although project execution plan avoids many issues in recent Alberta projects, some issues are the same: > Unavailable engineering and construction labor > Less experienced labor > Slips in engineering tied to construction	1.) Develop a robust engineering plan that leverages insight from engineering scope from other hydro projects.  2.) Leverage CEU PMN peers to relevant benchmarks. (Closed as part of item #2 above)	R. Power w/D. Pardy	31-Dec	<u>August 30/10 Comments</u> <i>A detailed engineering and procurment / contracting plan was completed for GI + IL, which is being leveraged for MF scope. Detailed plan will be developed in conjunction with EPCM consultant following mobilization.</i>	CLOSED
5	Schedule	Increased quantities make estimate and execution plan no longer adequate for purpose of controls	45	– If Lower Churchill Project falls behind in engineering: > Project might issue bid packages with incomplete or preliminary drawings > Packages could be delayed and force a less desirable negotiation period > Plan for 80 to 90% of design complete at start of construction.	1.) Re-validate quantities post completion of 2008 field program.  2.) Separated out into new item #40	B. Barnes	30-Nov	1. There have been no significant changes as a result of the 2008 work.  <u>August 30/10 Comments</u> <i>Field program currently underway at MF to validate geotechnical conditions which will feed into the development of a 3D CATIA model for site.</i>  <i>Have requested SNC for basis of 1998 MTOs in order to check.</i>	CLOSED
6	Schedule	Do not count on predictable engineering productivity and performance—plan for potential slip	53		Front-end load the engineering plan and build sufficient schedule contingency in to account for potential slippage.	R. Power w/D. Pardy	31-Dec	See also item #4	CLOSED

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7	Contracting & Procurement	Maintain discipline when completing FEL and producing adequate bid packages	53		Integrate the contracts plan and the engineering plan together and ensure they are synchronized.	R. Power w/P. Hussey	31-Dec	See also item #4	CLOSED
8	Labor	Have contingencies in place to account for a less productive and experienced labor force	53		1.) Validate practice of using historical productivities for basis of LCP current cost estimates considering climate, workforce experience, union jurisdictions, HSE requirements, etc.  2.) Engage recognized experts to discuss productivity improving opportunities.  3.) Work with Labor Relations to structure a labor agreement that includes the required components to boost productivity.  4.) Phase 2 LR strategy to consider incentives to attract and retain good supervision.	J. Kean w/D. Pardy (Items 1, 2 & 3)  L. Clarke w/D. Molloy (Item 4)	15-Oct	1.) Historical productivities have been balanced against new construction equipment production rates to develop reasonable assumptions for LCP. Additional productivity data has been gathered from MBH Long Spruce plant and will be used to validate current assumptions. Will also be obtaining further productivity info from MBH for Wuskwatim as construction progresses in 2009. 2.) Productivity workshop held on October 27/28 with a close-out report prepared. Detailed action plans for key risks has been developed. 3.) On-going - J. Kean and D. Pardy members of LR Strategy Team. 4.) On-going, benchmarking with Alberta currently being investigated. Overall labor cost updated in Q1-10 to reflect latest market information.  LATP in-place to assist with development of more trained individuals.	CLOSED
9	Contracting & Procurement	Get a solid understanding of equipment and material markets and pricing before commitment	53		1.) Keep on top of the marketplace - Develop a strategy for gathering further marketplace intelligence including a listing of all key equipment and materials requiring further insight.  2.) Continue to persue market escalation research.	P. Hussey (Item 1)  J. Kean w/D. Pardy (Item 2)	On-going	1.) Document MSD-MM-016 outlines LCP market intelligence to-date. Engineering has produced a major equipment listing with preliminary requirements identified which Supply Chain Mgmt has used to produce a Contracts Package List (Doc# MSD-MM-018) to use as a basis for identifying potential suppliers to use in confirming manufacturing lead times.  <b><i>August 30/10 Comments</i></b> <b><i>Detailed escalation study completed in Q3-09 through Q1-10 to more fully understand potential impact of price escalation.</i></b>	CLOSED
10	Business Objectives	Lower Churchill Project does not have clear alignment between business and project objectives. Misalignment Results in Gap Between Business Need and Project Functionality.  Several FEL 1 deliverables are not yet finalized into clear and detailed business objectives: – Economic analysis is not complete – Market analysis is not complete – Analysis of competition is not complete – Acceptable ranges for capital investment and cost of power sold is not complete	61	These analyses should be reduced to detailed business objectives that guide project’s objectives	Refer to Item 38.			The economics and breakeven points have been modelled and continued to be analyzed by Investment Evaluation. Given the sensitiviity of this information it minimal circulation (need to know basis only).  <b><i>August 30/10 Comments</i></b> <b><i>Gate 2 DSP and Project Charter reflect clarify on these items. Also reference Supplemental Report on Need, Purpose and Rational (IR 146 / 147).</i></b>	CLOSED

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11	Team Development	Team is developing NL Hydro work process alongside project development—cannot be improved due to lack of existing/established process for NL Hydro	72	Continue to implement and clarify the project work process – A strong work process is tied strongly to team alignment – Process guides and informs team	1.) Use of integrated teams across business lines has been very successful - continued use of this model is to be pursued.  2.) Develop Functional Management Plans for each department/function.  3.) Support the identification and development of all required business process.	P. Harrington (Item 1)  M. Peddle w/J. Ludlow (Items 2 & 3)	31-Oct	1.) Integrated Project/Business team meetings continue at working level and at VP/Manager level to improve on communications between all parties. 2.) & 3.) These items are complete for Phase 2. All functional management plans have been issued including the identification and registration of all business processes for each of the functional groups. IMS tool has been successfully rolled-out.  <b><u>August 30/10 Comments</u></b> <b><i>Reworking overall management system for Gateway Phases 3 and 4. To be completed for readiness for EPCM consultant.</i></b>	CLOSED
12	Team Functionality	Team Functionality - On Track, But Further Work Is Required  Currently, project team perceives that major issues need to be resolved: – Unclear objectives – Ineffective decision making – Poor interfaces and business leadership – Roles and responsibilities not understood – Poor alignment	80	Address team issues: – Although practices correlated with good team development are employed, team perceives that major issues remain > Unclear objectives > Ineffective decision making > Poor interfaces and business leadership > Roles and responsibilities not understood > Poor alignment – Continue to communicate the work process requirements as they are developed – When business and project objectives are finalized, share them with entire team to ensure alignment	1.) Update and communicate Project Execution Plan for Gate 3.  2.) Separated into new item #41  3.) Continue to use integrated cross-functional work teams.  4.) Implement decision-making approval process to facilitate more efficient and effective work processes.  5.) Create an LCP newsletter to communicate info to the full team on a regular basis.  6.) Continue quarterly teambuilding events to provide information and alignment.  7.) Provide and promote opportunities to share information across different divisions of the project through "lunch and learn" sessions, mailing lists to various organizational levels, etc.	J. Kean w/S. Lethbridge (Item 1)  P. Harrington w/D. Molloy (Items 3 & 4)  L. Barrington (Item 5)  D. Molloy (Items 6 & 7)	30-Sep	1.) Re-think of strategy for conclusion of PEP currently underway.  3.) Integrated cross functional team meetings are continuing 4.) Decision making approval process part of Governance document 5.) LCP monthly newsletter created 6.) Teambuilding event for October 2008 scheduled 7.) Internal functional awareness efforts have begun... October has been designated Information Management month  <b><u>August 30/10 Comments</u></b> <b><i>Project Execution Plan and Project Governance Plan address many of these issues. Gate 2 Organizational Plan currently under development.</i></b>  <b><i>Team functionality improvement continues to be a core focus. Renewed Management System approach anticipated to greatly facilitate.</i></b>	CLOSED
13	Team Functionality	Business and project objectives need to be more explicitly stated and communicated to team	81		Develop and implement a regular communication forum for all team members.	P. Harrington w/L. Barrington	30-Sep	Town hall sessions underway LCP newsletter - "Bridging the Gap"	CLOSED
14	Team Functionality	Roles and responsibilities for all team members should be explicitly defined and communicated	81	Organizational Manual to be prepared.	1.) Role descriptions to be prepared for all positions.  2.) Develop and maintain organizational manual that is available in an on-line format that includes organizational charts, role descriptions and mobilization plan.  3.) Full team organizational chart with photos to be put on entrance wall area.  4.) Implement uplift and overtime policy for project employees.	PMT (Item 1)  D. Molloy (Items 2, 3 & 4)	31-Dec	1.) Completed 2.) Completed 3.) Completed 4.) Completed - document in with Sr. Management with expected approval to be in-place for implementation post Gate 2 passage.  <b><u>August 30/10 Comments</u></b> <b><i>Gate 2 Organization Plan currently under development which will document detailed organizational charts and mobilization plan for readiness for EPCM mobilization.</i></b>	CLOSED

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15	Team Functionality	Timeliness of key decisions needs to be examined and addressed in the work process requirements	81		1.) Communicate general project timelines to team on a regular basis as well as factors that are influencing key decisions and milestones.	P. Harrington w/ L. Barrington (Item 1)	15-Sep	1.) Gate 2b will be the focus to get teams to understand the key decision points and how these impact future plans.	CLOSED
16	Team Functionality	Communication between team members needs to be improved – Some perceptions may be driven by segregating certain commercial responsibilities to prevent information leaks – If communications cannot be improved due to secrecy, at least guide team enough to promote understanding	81		2.) Separated in new item #42 1.) Develop a regular team building program.  2.) Establish cross-functional working groups wherever possible in order to remove barriers and solve problems of common interest.  3.) Communicate general project timelines to team on a regular basis as well as factors that are influencing	P. Harrington w/ L. Barrington & D. Molloy	15-Sep	1.) Team-building program plan underway. 2.) Cross functional teams being used where applicable. 3.) Project timelines will be part of regular team building subjects.  <u>August 30/10 Comments</u> Regular team communications continues to be a priority in order to ensure alignment on key priorities.	CLOSED
17	Team Functionality	One perceived gap from survey is in vertical integration between team and business • Project reportedly lacks a formal steering committee with regular meetings	83	Implement a formal steering committee for project – Should be comprised of stakeholder representatives and professionals with project experience – Should meet periodically with team to review deliverables and ensure alignment with overall business objectives – Should also be a means to more vertically integrate team with business – Role of committee is to provide guidance, but let team handle technical aspects of project	Establish and implement a formal project steering committee. Steering committee to be established underneath Project Governance Approach and be based upon a documented mandate or terms or reference.	G. Bennett w/ P. Harrington	31-May	<u>August 30/10 Comments</u> Project Governance Plan prepared for approval. Document includes key roles and responsibilities, and discusses decision making levels. Project Steering Committee Charter in-place and implementation on-going (currently being addressed within the Gatekeeper's Weekly Meeting).	CLOSED
18	FEL Index	Health and Safety Status is Factored—completing Hazard Identification (HAZID) before end of this stage is Best Practice	90	HAZID should be complete prior to Gate 2b	Develop Terms of Reference for HAZID and execute in mid to late September. Leverage external parties recognized for their expertise to participate in the HAZID.	J. Kean	31-Jan	Hazid completed in May-09 identifying a significant number of issues. These need to be worked moving forward into Gate 2b.  <u>August 30/10 Comments</u> "What-if" scenarios on-going as part of design activities. Safetey-by-Design concept and responsibility of EPCM consultant to implement currently contained in RFP.	CLOSED
19	FEL Index	No safety Constructability Reviews on project yet	114	HAZID should be complete prior to Gate 2b	Same as above - HAZID to focus both on Construction and Operations phases.			Same as item #18	CLOSED
20	FEL Index	• IPA identified practices that contribute to better safety: – Reward workers for identifying hazards – Pre-task planning done before every task – Use of substance abuse testing as part of safety program – Recognition awards – Safety performance in contract incentives – Immediate feedback on safety suggestions – Change in position as form of discipline • Lower Churchill Project plans to use all practices except safety incentives in contracts and change in position as discipline	116		1.) Understand latest industry research wrt safety incentives.  2.) Re-assess LCP policy and practices wrt safety incentives and link to contracting strategy.			<u>August 30/10 Comments</u> No recent developments / updates. This issue will be discussed with EPCM Consultant in order to develop a recommended way-forward.	CLOSED

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21	FEL Index	Research has shown that safety performance also correlates with FEL Index <ul style="list-style-type: none"><li>Two primary contributors to better FEL also correlate with safety:<ul style="list-style-type: none"><li>Project execution planning</li><li>Health and safety requirements</li></ul></li></ul>	117	Lower Churchill Project should ensure that these elements are Definitive by sanction	1.) Continue to develop LCP HSE Management System and ensure embedment into contractor selection process.  2.) Recruit and mobile OHS Lead.  3.) Further scope work scope for Phase 3 and roll-into overall project schedule.	J. Kean	31-Oct	Items 1 & 3 - Development on-going with satisfactory maturity for this stage of the project. 2.) Position identified on Manpower Plan and will be recruited as indicated.  <b><u>August 30/10 Comments</u></b> <b><i>Project Execution Plan drafted for Phase 3.</i></b>  <b><i>HSE Manager positioned to be recruited in Q4-10.</i></b>  <b><i>H&amp;S and Environmental Management Plans currently under development.</i></b>	CLOSED
22	FEL Index	Transmission - Gaps are (1) cost estimate, which is not yet of control grade quality, and (2) lack of finalized, detailed scope	94		1.) Further develop and analysis estimate for overland Tx as we move towards Gate 2b.  2.) Evaluate alternate protection options for SOBI.  3.) Metrological load investigation for overall Tx.	D. Pardy w/ D. Mahoney (Item 1)  R. Power (Item 2)  B. Barnes (Item 3)	31-May	1.) Linked (somewhat) to item 3.) - estimate templates have been established in PRISM which will be updated upon completion of engineering review 2.) SOBI options are being investigated in 2009, with a plan to make a perferred option selection decision by end of Q1-10. 3.) Awaiting results of ice loading and design reliability study.  <b><u>August 30/10 Comments</u></b> <b><i>Cost estimate for currently configured Island Link is not of control grade quality, rather is largely a scaled version of the larger 450 kV, 1/150 yr return period design and has been benchmarked against both 230 kV and 345 kV line construction. Estimate will be refined going forward.</i></b>  <b><i>SOBI crossing options identified and preliminary engineering in progress. Crossing decision, with preferred crossing option identified, to be made by 15 September 2010. Formal Decision Support Package to include technical, cost and schedule details.</i></b>	CLOSED
23	FEL Index	Transmission - This element is further along in some technical areas than most projects, but some fundamental scope issues need to be resolved before moving into FEL 3	94		Confirmation of market access route by Gate 2b.	G. Bennett	Gate 2b	<b><u>August 30/10 Comments</u></b> <b><i>Market Access route for Phase 1 confirmed - Island Link plus the option of tne NS - NL submarine Link via Bottom Brook. Reference Basis of Design for design parameters.</i></b>	CLOSED
24	FEL Index	FEL is ahead in some areas, and behind in others <ul style="list-style-type: none"><li>Design work is ahead of schedule</li><li>Engineering schedule and execution planning is a gap</li></ul>	124		Development of preliminary resource loaded engineering plan on a functional area basis to understand resource constraints and priorities. Ensure plan reflects all engineering scope and is time phased in accordance with the contracting plan.	R. Power w/ T. Scott	31-Oct	Scope A - Engineering plan developed Scope B - Engineering plan developed Scope C - Engineering plan developed Plans are now being converted into a linked and resourced schedule in Primavera  <b><u>August 30/10 Comments</u></b> <b><i>Detailed engineering and procurement plan for MF + IL yet to be established, however activities for such as contained in the Level 2 schedule based upon work completed for Gull. This work will be refined over the coming months in preparation for the EPCM mobilization who is responsible for the development of the detailed plans.</i></b>	CLOSED
25	FEL Index	However, schedule does not include enough detail for engineering and ties to detailed contracting tasks	95		Refer to Item 24.			<b><i>See comments above.</i></b>	CLOSED

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26	VIPs	Use of VIPs is planned to be in recommended range at time of sanction	102 & 125	Continue to implement VIPs according to Plan	Develop and document a strategy for implementation of VIPs in Phase 3.	B. Barnes w/ R. Power	Gate 2b	<u>August 30/10 Comments</u> <i>VIPS are maturing at reasonable rate with the project, e.g. Life Cycle Cost Analysis Philosophy issued for use. Reference VIP Workbook for further details.</i>	CLOSED
27	FEL Index	Team plans to use all required Best Practices for project controls - Planned Project Controls Are Good	107 & 125		1.) Separated as new item #43 2.) Roll-out IMS.	M. Peddle	31-Dec	Roll-out of IMS has completed week ending October 31  <u>August 30/10 Comments</u> <i>Project Controls Management Plan details controls to be used by the Team. Includes PRISM and Primavera and is largely based upon AACEI and PMI recommended practices. EPCM RFP articulates these requirements.</i>	CLOSED
28	Contracting	<ul style="list-style-type: none"><li>• Lower Churchill Project team indicated consideration of incentives in contracting strategy</li><li>• Recent projects executed in Alberta did not benefit from incentives</li><li>• Historical norms for projects do not indicate that projects benefit from incentives in any way</li><li>• Use of incentive contracting has no statistically reliable effect on cost, execution time, or cycle time, but results are directionally worse</li><li>• Use of incentives for engineering is strongly associated with poorer operability of facilities</li><li>• If Lower Churchill Project team is forced to use incentives due to market realities, include strict quality measures and control as part of those incentives</li></ul>	109-111		1.) Understand IPA research wrt Incentives.  2.) Develop an overall strategy with respect to incentives within the LCP contracting strategy.	L. Clarke w/ P. Hussey	31-Aug	Lessons Learned have shown that giving incentives to contractors is not effective. LCP is not considering use of incentives for its' engineering contractor or project support contract strategy. LCP will review the use of incentives for other contracts as they are identified and the overall strategy is completed.  <u>August 30/10 Comments</u> <i>Incentives are contemplated in the EPCM RFP however it has been left to consultant to propose for Nalcor consideration.</i>	CLOSED
29	Contracting	Incentivized engineering contractors sometimes lead to poor quality design deliverables and substantial rework.	109-111	If incentives are used then more than a normal amount of QC checks are required to be utilized to ensure engineering deliverables meet quality requirements.	Assess this observation and consider mitigation measures if employed in engineering contracting strategy.	R. Power w/P. Hussey	31-Aug	See comment for item #28.	CLOSED
30	Contingency	General megaproject norms for FEL 2 contingency are about 15 percent	120		Reassess LCP Contingency recommendation for Gate 2a.	J. Kean w/S. Lethbridge & D. Pardy	31-Jul	Benchmarking against IPA data has been completed. LCP expectation appears to be reasonable.  <u>August 30/10 Comments</u> <i>Currently carrying 21% provision for estimate contingency and strategic risk exposure</i>	CLOSED
31	Wages	<ul style="list-style-type: none"><li>• Projects in Alberta are experiencing all-in wage rates of C\$75 - C\$110</li><li>• Lower Churchill currently has C\$59 in estimate</li><li>• Current strategy is to leverage interest of Newfoundland laborers working in Alberta to return to NL<ul style="list-style-type: none"><li>– Close to home</li><li>– Provincial pride</li></ul></li><li>• The level of risk might not be represented adequately in the risk mitigation plan</li></ul>	122	Develop contingency plans for labor-related risks <ul style="list-style-type: none"><li>– Labor wage in cost estimate does not come close to typical wages offered in Alberta’s current market</li><li>– Engineering costs increased rapidly in past few years</li><li>– Furthermore, a lack of experience in engineering and construction (in Alberta) has reportedly impacted productivity in both areas</li><li>– Consider impacts of these factors on productivity, estimating, potential schedule slips, and safety plans</li></ul>	1.) Re-validate LCP labour cost against IPA database.  2.) Consider productivity and labour shortfalls as a component of LCP Labor Relations strategy.  3.) Address wages and benefits standards as part of LR strategy.  4.) Address labor supervision attraction and retention strategy as part of LR strategy.	J. Kean w/ D. Pardy (Items 1 & 2)  L. Clarke w/D. Molloy (Items 3 & 4)	15-Aug (Items 1 & 2)  31-Oct (Items 3 & 4)	1.) Validation complete. LCP average wage rate is \$88 CDN.  2.) No update for period.  3.) Wages and benefits standards are addressed in LR strategy. Database continues to be updated with the assistance of McInnis Cooper  4.) Labour supervision and retention to be addressed. Discussions with Services Canada regarding temporary foreign worker recruitmnet starting on Oct 29, 2008. Discussions with Immigration Officials also ongoing. Deemed to be as mature as possible at this stage.  <u>August 30/10 Comments</u> <i>This continues to be a area for focus for LCP. Labor rates were reviewed / updated in Q1-10 based upon latest market intelligence. Reference overall labor strateav.</i>	CLOSED



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32	General	Many practices and lessons learned from recent IPA research need to be considered as project moves from FEL 2 to FEL 3	125		Obtain insight into IPA practices and lessons learned and develop strategy for implementation in Phase 3.	J. Kean w/ LCPMT	31-Jul	No update for period.  <u>August 30/10 Comments</u> <i>The Project Team continues to gather lessons learned. Key lessons learned implemented to-date have been articulated in the Lesson Learned / Best Practices Implementation Report.</i>	CLOSED
33	General	Practices required to complete FEL 2 are nearly achieved, but project still has unresolved risks – Detailed business objectives are not finalized – Project scope is not yet closed	124		Refer to Item 38.	P. Harrington		Covered under item #38	CLOSED
34	Key Manageable Risks	Economics behind project are not fully understood and integrated into overall business strategy, business objectives, and project objectives	126		Reflect Gate 2a Economic Analysis in project objectives and document drivers in Project Charter.	P. Harrington	15-Sep	Covered under item #38	CLOSED
35	Key Manageable Risks	Project needs to complete all required project execution planning activities, particularly in engineering	126		Refer to Items 21 & 24.			Construction planning remains a gap within the organization.  <u>August 30/10 Comments</u> <i>Construction resources yet to be mobilized, which has limited core construction planning activities.</i>  <i>Engineering and procurement planning has been largely addressed - reference EPCM RFP.</i>	CLOSED
36	Key Manageable Risks	Project could over-commit funds prior to sanction, suffering a loss of equity if project does not go forward	126		Assess the risk and reward of carrying multiple market scenarios post Gate 2b.	G. Bennett w/ P. Harrington	Gate 2b	The market scenarios have to be decided by Gate 2b.  <u>August 30/10 Comments</u> <i>Gate 2 predicated upon Phase 1 of LCP = MF + Smaller Island Link with the option for the NS-NL Link.</i> <i>Gate 2 represents the approval of the business case.</i>	CLOSED
37	Key Manageable Risks	Team needs to be further aligned and developed in a number of key areas	126		Refer to Items 12 - 16.			Covered under items #12 through #16. Largest gaps are Construction and HSE.	CLOSED
38	Business Objectives	Business objectives summarized in project charter but lacked: - Economic goals - Documented cost-versus-schedule trade-offs - Costs for alternative scopes	10	Complete required economic deliverables and recast business and project objectives – To understand project’s drivers, economics and power market constraints need to be understood – Otherwise scope cannot be closed, and if project continues without closed scope, resources will be inefficiently used – Without detailed business and project objectives, team will not develop into an aligned and functional group	Ensure project objectives reflect the business objectives and document in the project charter.	P. Harrington	Gate 2b	<u>August 30/10 Comments</u> <i>Reference revised Project Charter - this has been addressed.</i>	CLOSED
39	Estimate	Despite qualitative information and mega project history, IPA could not produce reliable cost and schedule benchmarks	23		Undertake 3rd party estimate review with Shadow Engineer and extract relevant benchmarks.	J. Kean w/D. Pardy	Gate 2b	Plan in-place to engage a Shadow Engineer following Engineering Design and Project Support Agreement (ED&PSA) EOI. This may take considerable time.	CLOSED
40	Schedule	Increased quantities make estimate and execution plan no longer adequate for purpose of controls	45		Engage a peer review team to complete a holistic review of the design basis in order to verify that no gaps exist.	B. Barnes	Gate 2b	<u>August 30/10 Comments</u> <i>To be actioned post Gate 2.</i>	CLOSED

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Item No.	Area	Finding / Observation	Slide Ref	Recommendation	Definitive Action to be Taken Prior to Gate 2b	Action Lead	Target Completion Date	Comment / Details	Status (Open/Closed)
41	Team Functionality	Team Functionality - On Track, But Further Work Is Required  Currently, project team perceives that major issues need to be resolved: – Unclear objectives – Ineffective decision making – Poor interfaces and business leadership – Roles and responsibilities not understood – Poor alignment	80		Complete RACI exercises in various functional divisions to facilitate improved coordination and overall team functionality.	S. Lethbridge/D. Molloy	31-Dec	RACI program in-place with corporate to identify interaction with NE-LCPMT. Lance Clarke involved as coordinator from NE-LCPMT's perspective. NE-LCP RACI's to follow on from corporate's initiative.  <u><b>August 30/10 Comments</b></u> <i>In addition to the above, the Project Governance Plan provides clarity on these functional interfaces.</i>	CLOSED
42	Team Functionality	Timeliness of key decisions needs to be examined and addressed in the work process requirements	81		Conduct a management teambuilding / retreat exercise to ensure alignment at senior level. Following exercise present and receive mandate from ECNL leadership to proceed.	P. Harrington w/D. Molloy	31-Jan	LCP management awayday being planned for January. Meeting held with regular sessions planned as an ongoing activity. Additionally, this issue has been addressed through the Governance and Project Steering Committee documents	CLOSED
43	FEL Index	Team plans to use all required Best Practices for project controls - Planned Project Controls Are Good	107 & 125		Ensure understanding of project controls within team through formal training sessions.	D. Pardy	31-Dec	PC 101 presentation prepared and set to be delivered before year end. Three (3) meeting held with key groups (including engineering and environment) already being covered - others will continue as the need arises.	CLOSED



**Table A-2: IPA Pacesetter Evaluation of LCP - June 2008**  
**Gap Closure Plan Status**

Project Components	Assigned Actions	Total Open	Total To Be Closed	Total Closed
Business Objectives	3	1	0	2
Estimate and Contingency	3	1	0	2
Schedule	4	1	0	3
Contracting and Contracting & Procurement	4	0	0	4
Labor and Wages	2	0	0	2
Team Development and Team Functionality	9	2	0	7
VIPs	1	1	0	0
FEL Index	10	4	0	6
General	2	0	0	2
Risks and Key Manageable Risks	5	1	0	4
<b>TOTALS</b>	<b>43</b>	<b>9</b>	<b>0</b>	<b>34</b>