

Nalcor Energy – Lower Churchill Project



Decision Gate 3 Key Deliverables List

LCP-PT-MD-0000-PM-LS-0002-01

Comments: This document supersedes GEN-PM-002 LCP Gate 3 Key Deliverables	Total # of Pages (Including Cover): 15
---------------------------------------------------------------------------	--------------------------------------------------

B1		Approved for Use / Implementation	J. Kean	B. Crawley	A. Warren	P. Humphries	P. Harrington
Status/ Revision	Date	Reason For Issue	Prepared By	Corporate Interface Manager Approval	Manager, Investment Evaluation	Manager, System Planning	Project Director Approval
CONFIDENTIALITY NOTE:		This document contains intellectual property of the Nalcor Energy – Lower Churchill Project and shall not be copied, used or distributed in whole or in part without the prior written consent from the Nalcor Energy – Lower Churchill Project.					

Inter-Departmental / Discipline Approval (where required)

Department	Department Manager Approval	Date
General Manager, Commercial & Finance		
	R. Hull	
Manager, System Operations		
	R. Henderson	
Corporate Treasurer / Chief Risk Officer		
	J. Meaney	
CFO		
	D. Sturge	
VP LCP		
	G. Bennett	

TABLE of CONTENTS

1.0 Purpose	4
2.0 Scope	4
3.0 Definitions.....	4
4.0 Abbreviations and Acronyms	5
5.0 Reference Documents and/or Associated Forms	5
6.0 Responsibilities	6
7.0 MF/LTA/LITL Gateway Phase 3 Key Deliverables	7
7.1 Business	8
7.2 Project Execution	10
7.3 External.....	13
7.4 Third Party Reviews	14
8.0 ML Gateway Phase 2 Key Deliverables	15

1.0 Purpose

The purpose of this *Decision Gate 3 Key Deliverables List* is to present the pre-requisite Key Deliverables required to move LCP Phase I through Decision Gate 3 of the [Gateway Process](#), reference document [LCP-PT-MD-0000-PM-PR-0001-01](#).

2.0 Scope

This *Decision Gate 3 Key Deliverables List* is applicable to the Project during Phase 3 of the [Gateway Process](#), covering the engineering, procurement, construction and project management associated with the following “Sub-Projects” of the LCP Phase I:

- Muskrat Falls Generation (MF)
- Labrador Transmission Assets (LTA)
- Labrador – Island Transmission Link (LITL)

Another important element of the overall LCP Phase I is the Maritime Link (ML), to which the concepts contained herein are applicable and directly transferable, however the specific Key Deliverables that are prerequisite for its Decision Gate 3 are outside the scope of this document.

3.0 Definitions

Decision Gate	A Decision Gate is a predefined moment in time where the Gatekeeper has to make appropriate decisions whether to move to the next stage, make a temporary hold or to terminate the project. The option to recycle to the current stage is considered an undesirable option unless caused by changes in business conditions.
Decision Gate Review	A review of the project prior to a Decision Gate to provide the degree of assurance required by the Gatekeeper.
Final Disclosure	The point in time during the Project Financing at which the proponent has achieved the necessary pre-requisites to allow the lenders to prepare its firm financing proposal, leading up to Financial Close.
Gatekeeper	Individual responsible for making the decision at the Decision Gate of the Gateway Process.
IPR Charter	Document details the purpose / objective / scope of an IPR Review which when approved sanctions the assembly of an IPR Team to

complete the review detailed in this document.

Key Deliverable	High-level listing of key outputs/documents which collectively demonstrate that objectives of the relevant Phase of the Gateway Process have been attained.
Project Financing	The process of financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure where project debt and equity used to finance the project are paid back from the cash flow generated by the project. ¹
Project Management Team	The Project Management Team (PMT) is led by the Project Director and is made up of project leaders and key functional representatives. The PMT meets periodically, to identify issues that may affect cost and schedule and to determine how such issues should be resolved.

4.0 Abbreviations and Acronyms

AFE	Authorization for Expenditure
DG	Decision Gate
DGSP	Decision Gate Support Package
ExCom	Executive Committee
FEL	Front-End Loading
IPR	Independent Project Review
MDR	Master Document Register
MF	Muskrat Falls Generation
MFL	Manpower Forecast Loading
ML	Maritime Link
NE-LCP	Nalcor Energy – Lower Churchill Project
LITL	Labrador – Island Transmission Link
LTA	Labrador Transmission Assets
PMT	Project Management Team

5.0 Reference Documents and/or Associated Forms

[LCP-PT-MD-0000-PM-PR-0001-01](#)

[Gateway Process](#)

¹ The International Project Finance Association, www.ipfa.org

6.0 Responsibilities

Nalcor Energy President and CEO	Is the Gatekeeper for the NE-LCP in accordance to the Gateway Process.
Project Director	<p>Responsible for:</p> <ul style="list-style-type: none"> • Ensuring that the Project is planned and executed in accordance to the requirements of the Gateway Process. • Preparing the Decision Gate Support Package for review and approval by the Executive Committee and IPR Team. • Ensuring Key Deliverables required for each Decision Gate are understood and pre-approved by the ExCom.
Lower Churchill Project Vice President	Accountable to ensure overall strategic project planning is consistent with the Gateway Process and is responsible to take the recommendation at a Decision Gate forward in accordance with established approval levels and protocols.
LCP Executive Committee (ExCom)	<ul style="list-style-type: none"> • Accountable to ensure that the Project is planned and executed in accordance to this Gateway Process. • Approval of Key Deliverables requirements for each Decision Gate. • Sanction Independent Project Reviews on behalf of the Gatekeeper.
IPR Team	<p>Responsible for:</p> <ul style="list-style-type: none"> • Conducting the Decision Gate review in accordance to the approved IPR Charter, • Preparing the Decision Gate review report, and • Submitting it to the Gatekeeper for review and approval.
Project Team	<p>Responsible to:</p> <ul style="list-style-type: none"> • Understand this Gateway Process, • Completion of activities required to substantiate completion Key Deliverables, • Preparing for and support the completion of any approved IPR in accordance to the approved IPR Charter.

7.0 MF/LTA/LITL Gateway Phase 3 Key Deliverables

The work underway during Gateway Phase 3 has two key focus areas:

1. Completing the amount of project definition (i.e. engineering, procurement planning, construction planning) so as to produce the cost and schedule estimates required for economic analysis leading to Decision Gate 3 decision. Decision Gate 3 acts as the final check and confirmation that the investment decision is well founded.
2. Ensuring a state readiness (people, processes and tools) is achieved to commence construction pending approval of the Decision Gate 3 decision.

The Decision Gate 3 cost and schedule estimates are a key input to verify the financial viability (established at Decision Gate 2) and have an intended purpose of:

- Verifying the Decision Gate 2 estimate
- Providing an increased level of confidence in outcome required to facilitate the approval to move forward with Project Approval or Sanction
- Establishing the Project Budget
- Establishing contingency levels based upon cost and schedule risks analysis

The following sub-sections list the Key Deliverables identified as being required for a DG3 decision. However it is emphasized that not all deliverables need to be 100% complete to make the DG3 decision, rather the Gatekeeper shall consider the aggregate status of all deliverables in making the decision.

These Key Deliverables have been sub-divided into the following categories:

- Business
- Project Execution
- External
- Third Party Reviews

In addition to the MF, LTA, and LITL DG3 decision, there is a requirement that the ML Project will have successfully carried out a DG2 decision that is acceptable in to the ML Joint Development Committee and the capital cost estimate for the ML will be updated based on the cost knowledge gained from the MF/LTA/LTIL Gateway Phase 3 work including market information, labor costs, and actual quotes.

It should be noted that prior Project Sanction at the end of Gateway Phase 3 there can be some intermediate approvals to proceed with early works construction, long-lead item contract awards, and other activities necessary to de-risk the project schedule and / or maintain project milestones. Appropriate cancellation mechanisms are to be utilized in such contracts and purchase orders to minimize financial exposure in case of Project suspension or cancellation.

7.1 Business

General	
	Project Charter In-Place
	Cost and Schedule Estimates for MF, LTA and LITL with an accuracy of AACE International Class 3 Equivalent
	Project Risk Management Plan and supporting risk management process in-place with all Key Project Risks identified / management strategy identified
	Cost and schedule risk evaluation completed – forms the basis of cost and schedule contingencies and reserves recommendations
	Least Cost Analysis (CPW) for Island including updated PIRA forecasts, risk analysis and sensitivities
	Generation Planning Issues Report ready to or filed with PUB, supported by System Expansion Model (Strategist) Complete
	Economical / Financial Analysis (NPV, IRR, ROE, debt coverage, cash flow) complete and optimized for DG3
	Project Execution and Contracting Approach aligned with Project Financing requirements
	Insurance Placement for Early Works Underway with Broker
	Plan and Schedule for Major Project Insurance Program Placement Agreed with Broker
Formal Agreements	
	LITL and ML transmission configuration finalized – system optimization work bottomed out and exhausted
	LITL Limited Partnership Agreement executed
	Water Management Agreement executed
	Water Lease for Churchill River In-Place
	Operations strategy agreed between Nalcor and its subsidiaries
	All legal entities for Project execution established or underway
	All Province of NL legislative changes as required for Project underway
Project Financing	
	Project Financing Plan Established with Implementation on target to meet requirements of Financial Close
	Shadow Credit Rating Completed – 3 ratings provided
	Commitment Letter from Province of NL

	Contingent Equity Level Established and Agreed with GNL
	Term Sheet NLH / Nalcor in-place
	Agreement with Province finalized
	Loan Guarantee with Canada in-place
	Equity Secured for first 1.5 years – no debt
Governance	
	Board of Directors Consultation / Engagement Plan implemented with alignment achieved
	Alignment of both governments of NL and NS
	Contractor / Nalcor / Emera integration process / interfaces identified
	Provincial Regulatory Framework Amendments underway
	Regulatory framework in-place with respect to Transmission Access for Anchor Load(s)
Funding	
	Gateway Phase 4 Master AFE Submitted for Approval

7.2 Project Execution

Management and Control	
	Project Governance Plan In-Place defining Key Decision Making Authorities
	Project Execution Plan In-Place
	Organizational design and practices (including organization charts and role descriptions) in-place with all key staff mobilized and plan for mobilization of remaining team in-place
	EPCM Consultant personnel quality review – leadership and supervision
	Capital Expenditure Authorization Procedure approved for Gateway Phase 4 use in-place
	Project Control Schedule / Integrated Project Schedule, supported by detailed engineering, procurement and construction schedule in-place with primary critical path(s) identified
	Project Controls Management Plan with demonstrated Project Controls established
	Communications and Stakeholder Relations Plan Implemented
	Engineering Management Plan established and implemented
	Project Quality Plan supported by key processes and procedures established
	Supplier Quality Assurance Program developed
	Management of Change Plan Implementation Complete
	Gateway Phase 3 engineering and detailed design deliverables complete as required to meet Project contracting plan
	Lessons Learned / Value Improvement Practices Review and Implementation Complete for Gateway Phase 3
	Project Information Management and Technology Plan Implementation Complete
	Project Benefits Plan issued for use and reporting systems ready
	Lands Acquisition Plan in-place with rights acquired for construction use
	Labour Recruitment Plan in-place
	Office, equipment, IT and infrastructure plan in-place
	Project Training Plan in-place
	EPCM Consultant's management plans (Table 1.1) in-place supported by enabling processes and procedures
	Engineering deliverables plan for Gateway Phase 4 in-place, supported by MDR, MFL and schedule.
	Human Resource procedures and policies for Gateway Phase 4 approved for use

Technical / Engineering & Design	
	Updated Basis of Design for Project completed (from Gateway Phase 3)
	Technical Interface Management Plan in-place with all key interfaces identified
	All design philosophies established
	All design technology and processes selected
	Project-specific design criteria documented for all disciplines and issued for use
	Project-specific equipment specifications Issue for design, as required to meet Project contracting plan
	Project-specific bulk materials specifications, as required to meet Project contracting plan, approved for use
	Project site / plot plans / general arrangements frozen – MF, LTA and LITL
	All geotechnical surveys, data acquisition and analysis complete
	All equipment packages defined
Construction Execution	
	Construction Execution / Management Plan In-Place, including clarity on on-site presence for quality surveillance
	Construction Execution Organization agreed with EPCM Consultant
	Labour Relations Strategy executed with Collective Agreements in-place
	Special Project Designation received from the Province within the Labour Act
	Overall Productivity Action Plan for Project Established
	Construction Plan – Temporary Facilities and Services Identified
	Constructability review, commensurate with maturity of engineering, completed for Project supported by a detailed construction schedule and documented construction execution philosophy
	Handover / Start-up Systems identified
Contracting and Procurement	
	Overarching Project Contracting Plan In-Place supported by detailed contract and procurement package listing
	Procurement Management Plan supported by key processes and procedures established
	Contract Administration Plan supported by key processes and procedures established

	Long-lead items (e.g. turbines & generators, subsea cable, converters) identified and in progress to meet need date.
	Procurement and contracting schedule in-place to support award of key contracts and purchase orders to meet Financing requirements
	Camp and Support Infrastructure materials and construction contracts ready to award
	Procurement underway for all Long-Lead items in accordance to Procurement Plan
	Logistics and Freight Forwarding Plan In-place
HSE	
	Approved for Design (AFD) and Approved for Construction (AFC) Process Hazard Analysis (PHA) and Hazard Operability Reviews (HAZOPS) completed, commensurate with the maturity of engineering
	Project Health and Safety Plan supported by key processes and procedures established
	Early Emergency Response Plan established
	Threat Assessment complete with Early Security Management Plan established
	Project Regulatory Compliance Management Plan established
	Project Environmental Protection Plan in-place
	Preliminary Environmental Effects Management Program
	Drug and Alcohol Policy in-place
Operations	
	RFO Strategy Agreed
	Operability review complete on the overall project design and configuration
	Sparing Philosophy and Strategy In-Place
	Life Cycle Value Analysis Design Reviews Complete
	Commissioning and Start-up Philosophy In-Place
	Documentation for Operations Strategy in-place with turnover protocols defined
	Operability Standards for Equipment Selection Defined

7.3 External

EA and Authorizations	
	Ministerial Decision for Generation Project EA
	Ministerial Decision for LITL EA (or advanced sufficient for Gatekeeper's requirements)
	All Consents, Permits and Licenses required established with early C, P & L received with no schedule showstoppers identified.
	EA Commitments List In-Place with Implementation Plan drafted
Aboriginal	
	Impact and Benefits Agreement (IBA), Upper Churchill Redress, New Dawn executed
	All required Aboriginal agreements executed and ratified where applicable (e.g. LMN, Quebec Innu, land claims, etc.)
Other	

7.4 Third Party Reviews

	IPA Pacesetter Evaluation completed for MF, LTA and LITL indicating an acceptable FEL score
	Independent Readiness Review for Decision Gate 3 (MF, LTA and LITL) complete and Gap Closure Plan in-place
	Public Utilities Board Review Complete (DG2 decision)
	Navigant DG3 Review Complete
	Cold Eyes Review of DG3 Cost Estimate

8.0 ML Gateway Phase 2 Key Deliverables

The following are the DG2 Key Deliverables for the Maritime Link that will influence the DG3 readiness of MF + LTA + LITL.

General	
	Maritime Link Joint Development Agreement (JDA) Executed
	Newfoundland and Labrador Development Agreement (NLDA) Executed
	EA registration complete for Maritime Link
	Cost and Schedule Estimates for Maritime Link with an accuracy of AACE International Class 4 Equivalent
	UARB Filing Complete with Positive Indications or Advanced Sufficiently
	Independent Readiness Review for Decision Gate 2 (ML) complete and Gap Closure Plan in-place