

Nalcor Energy – Lower Churchill Project



Gateway Process

LCP-PT-MD-0000-PM-PR-0001-01

Comments: This document supersedes: MSD-PM-008 – Lower Churchill Project Gateway Process	Total # of Pages (Including Cover): 35
--	--

B1	09-Jun-11	For Use / Implementation	J. Kean	L. Clarke		P. Harrington
Status/ Revision	Date	Reason For Issue	Prepared By	Checker		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

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	5
7.0	Gateway Process Overview	6
8.0	Process Application for Lower Churchill Project	9
8.1	Key Deliverables.....	12
8.2	Decision Gate Support Package	13
8.3	Independent Project Reviews	15
A.0	Activity Flowchart (Excel Format).....	16
A.1	N/A	16
B.0	Attachments/Appendices.....	17
B.1	Template: Decision Gate Key Deliverable Status	
B.2	Template: Decision Gate Support Package	
B.3	Template: Decision Gate Step 1 – Declaration of Readiness	
B.4	Template: Decision Gate Step 2 – Acceptance of Readiness	
B.5	Template: Decision Gate Step 2 – Readiness Approval	

1.0 Purpose

The purpose of this document is to present the stage-gate process, referred to as the Gateway Process, which will be utilized to strategically plan the execution of the Nalcor Energy – Lower Churchill Project (NE-LCP or the Project) as a key enabler of capital predictability. Consistent with the intentions of stage-gate processes, the Gateway Process is designed to focus decision-making at crucial points in a project’s lifecycle thus provides a powerful internal decision-making tool.¹

2.0 Scope

This *Gateway Process* shall apply for the planning and execution phases of the Lower Churchill Project.

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.

¹ Kerzner, Harold, (2006), Project Management – A Systems Approach to Planning, Scheduling, and Controlling 9th Edition, pp. 64 - 65
Hoboken, NJ: John Wiley & Sons, Inc.

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. ²
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
NE-LCP	Nalcor Energy – Lower Churchill Project
PMT	Project Management Team

5.0 Reference Documents and/or Associated Forms

N/A

6.0 Responsibilities

Nalcor Energy President and CEO	Is the Gatekeeper for the NE-LCP in accordance to this Gateway Process.
Project Director	Responsible for:

² The International Project Finance Association, www.ipfa.org

- 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)

- 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

Responsible for:

- 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

Responsible to:

- 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 Gateway Process Overview

The most significant opportunities to capture and maximize project value, and hence ensure capital predictability, are during the front-end of a project's lifecycle as is depicted in Figure 1 – The Project Influence Curve. This value is normally attained through a practice referred to as

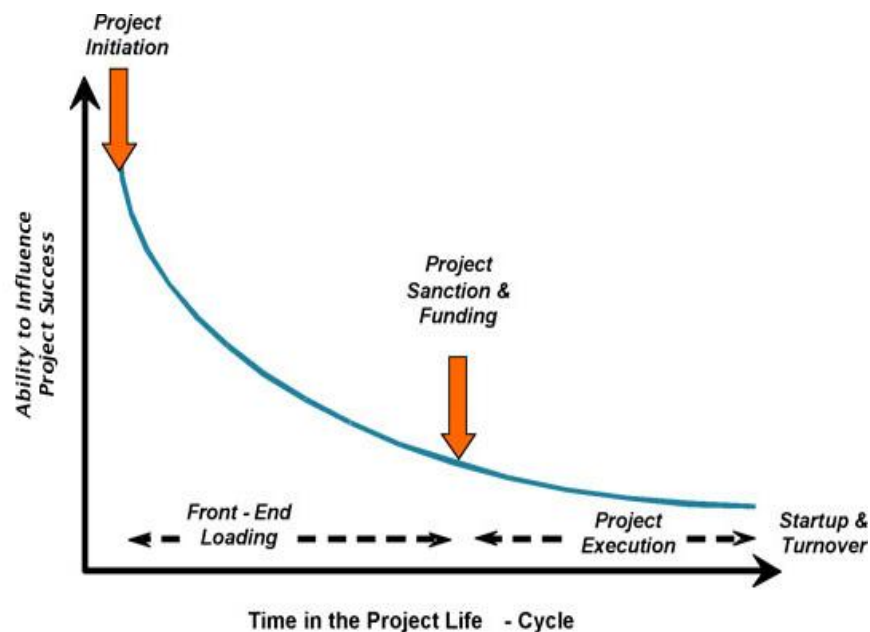
Front-End Loading (FEL). Quite simply stated, as the development cycle moves forward, the ability to influence final cost and add value decreases.

In order to implement the influence curve concept, the idea of FEL took hold, placing more emphasis on the planning and design development activities and structured decision-making in the Front-End (i.e., pre-sanction) stages of the project. “Stage-gate” processes became a widely used best practice to codify the activities, deliverables and responsibilities required for effective FEL.³

Within a stage-gate process stages, also referred to as phases, the following applies:

- Where the action occurs – the project team completes key activities to advance the project to the next gate;
- Cross-functional (there is no R&D or marketing stage) and each activity is undertaken in parallel to accelerate speed;
- Where risk is managed – vital information is gathered (technical, market, financial, operations) required to effectively manage risk; and
- Incremental – each stage costs more than the preceding one resulting in incremental commitments. As uncertainties decrease, expenditures are allowed to rise and risk is managed.

Figure 1: The Project Influence Curve⁴



³ The Westney Advisor, “Are Stages & Gates Destroying Predictability? The Unintended Consequences of Front-End Loading” August 2008, www.westney.com

⁴ Ibid.

Figure 2 endeavors to illustrate the process that occurs within the stages resulting in the production of Key Deliverables.

Figure 2: Depiction of Process during Stages or Phases



With reference to Figure 3, Decision Gates are:

- Where the Go/No Go and prioritization decisions are made;
- Focused on three key issues: quality of execution; business rationale; and the quality of the action plan; and
- Where scorecards and benchmarking criteria are used to evaluate the project's potential for success.

Figure 3: Depiction of Process at Gates



8.0 Process Application for Lower Churchill Project

The stage-gate process adopted for the Project is depicted Figure 4, which is referred to simply as the “Gateway Process.”

The Gateway Process is a stage or phased decision gate assurance process that will be used to guide the planning and execution of the business opportunity presented by the lower Churchill River from identification through to operations. It has the following objectives:

- To provide a process to enable best value-adding potential to be captured and utilized.
- To provide a mechanism for the Nalcor Energy Executive Committee, NE-LCP Vice President, and the Gateway to verify readiness to move from one phase to another in a systematic manner during the lifecycle of a project;
- To demonstrate due diligence checks and balances are being applied during the execution of the Project; and
- To provide a means to pre-define “readiness” deliverables required for a project to progress from one project phase to the next (i.e. decision gate reviews).

The owner of the Gateway Process shall be the Nalcor Energy CEO & President with responsibility for the implementation and stewardship of the process delegated to the responsible VP. The NE CEO & President is also the Gatekeeper for the Project.

Within the Project the phases are managed by cross-functional teams and are referred to as Gateway Phases, while the gates (known as Decision Gates) are structured decision points at the end of each Gateway phase.

It is a core responsibility of the PMT to manage the phases between the gates, in order to optimize (i.e. shorten) the time between gates. For each Decision Gate there are a number of pre-determined Key Deliverables that have been agreed with the Gatekeeper. These Key Deliverables must be delivered to an acceptable quality in order to facilitate efficient and effective decision making at the applicable Decision Gate regarding the forward direction of the Project by the Gatekeeper.

The Key Deliverables for each Gateway phase are developed specifically for the Project and are developed with consideration of both standard project execution best practice, but more importantly with the consideration of the overall risk spectrum and tolerance for the Lower Churchill Project. These Key Deliverables have been designed to address all Project focus areas and encompass commercial arrangements, financing, regulatory, environment, aboriginal affairs, engineering and technical, project execution and stakeholder management.

The use of formal Decision Gates facilitates decision-making by the Gatekeeper of the readiness of a project to move from one phase to the next, whereby the capital intensity of the phase

increases. Structured decision points are provided at which the Gatekeeper, who is the person empowered to enforce the use of the Gateway Process and to make a decision on the future of the Project, has to make appropriate decisions whether to:

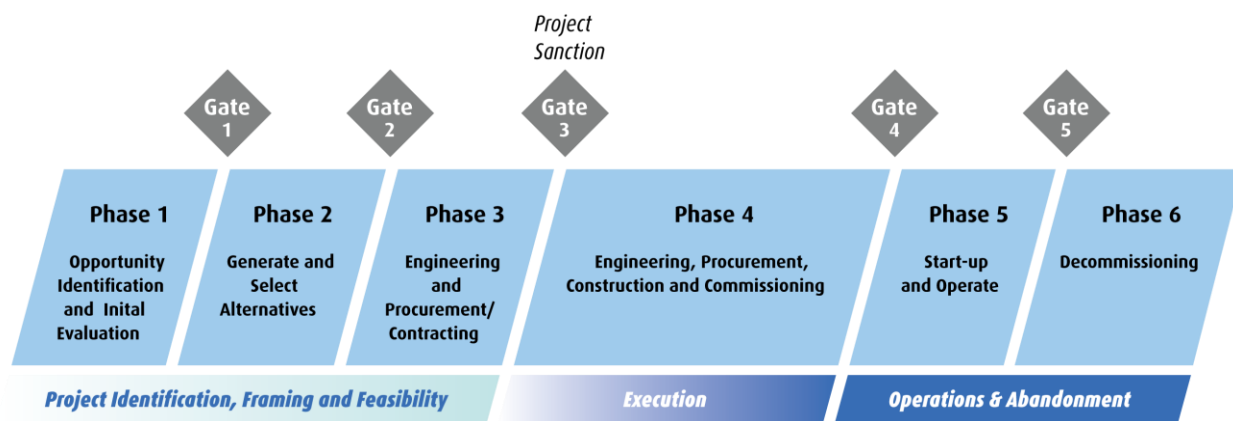
- hold all activity pending receipt of some final clarifications or supporting information is received, or
- move into the next sequential phase, or
- stop / terminate all activity to proceed to the next project phase.

The option to recycle to the current phase is considered an undesirable option unless caused by changes in business conditions.

The Decision Gates contained within the Gateway Process are:

- Decision Gate 1 – Approval to Proceed with Concept Selection
- Decision Gate 2 – Approval of Development Scenario and to Commence Detailed Design
- Decision Gate 3 – Project Sanction
- Decision Gate 4 – Approval to Commence First Power Generation
- Decision Gate 5 – Approval to Commence Decommissioning

Figure 4: Project Gateway Process



The six (6) sequential Phases of the Gateway Process are:

Gateway Phase 1 – Opportunity Identification and Initial Evaluation

Includes the initial feasibility evaluation of the identified business opportunity, which in the case of the Project is the development of the hydropower potential presented by the lower Churchill River. This Gateway Phase culminates at Decision Gate 1, at which a decision on whether the Project is feasible and worth pursuing further is made.

Gateway Phase 2 – Generate and Select Alternatives

The objective of this Gateway Phase is to generate and evaluate a number of development options from which a preferred option to develop the business opportunity is selected. This Gateway Phase culminates at Decision Gate 2, at which point approval is sought for the recommended development option, the execution strategy, and to proceed with the start of detailed design. This phase involves aboriginal negotiations, environmental assessment process, field work, power sales and access, financing strategy, advanced engineering studies, early construction planning, and economic analysis.

Decision Gate 2 is of strategic importance to the NE-LCP as it signifies that the development scenario, including phasing and sequencing has been confirmed, and that the Project Team is ready to move forward with detailed engineering and procurement / contracting and prepare to commence early construction works following release from environmental assessment. During Gateway Phase 3, engineering will progress to a level of completeness required to facilitate the award of key construction and supply contracts required to maintain the overall project schedule as well as provide the level of cost and schedule certainty for a Decision Gate 3 passage.

Gateway Phase 3 – Engineering and Procurement/Contracting

Gateway Phase 3 is focus on completing the amount of engineering and design, procurement planning, construction planning, and progressing environmental and regulatory approvals, and project management activities so as to produce the a cost and schedule estimates required for the Decision Gate 3 decision. Decision Gate 3 acts as the final check and confirmation that the investment decision is well founded.

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

Gateway Phase 4 – Engineering, Procurement, Construction and Commissioning

This is the “building” phase of the Project in which the hydroelectric facility and associated transmission takes shape and peak employment occurs. Concurrent to the start of early construction activities, the remaining engineering, procurement and contracting activities are completed. This Gateway Phase ends at Decision Gate 4, which signifies a readiness to commence production of electricity.

Gateway Phase 5 – Start-up and Operate

The construction is substantially completed and electricity production occurs and transmission systems are energized. This includes facility maintenance and daily operation of the facilities.

Gateway Phase 6 – Decommissioning

A decision regarding the decommissioning of the hydroelectric development when the facility has reached the end of its productive life occurs at the beginning of this Gateway Phase, signified by Decision Gate 5. Following passage through this Decision Gate, decommissioning of the plant occurs.

8.1 Key Deliverables

For each phase of the Gateway Process there are a number of Key Deliverables and associated criteria that must be agreed at the start of the phase within the PMT and with the Gatekeeper. These Key Deliverables must be delivered to an acceptable quality in order to facilitate efficient and effective decision making at the applicable Decision Gate regarding the forward direction of the Project.

The Key Deliverables for each phase are developed specifically for the Project in consideration of both project execution best practice, but more importantly with the consideration of the overall risk spectrum and tolerance for the Project and the need to facilitate risk-informed decision making as illustrated in Figure 5. For the NE-LCP, these Key Deliverables will be designed to address all areas requiring focus encompassing power sales, market access, regulatory, environment, aboriginal affairs, engineering and implementation.

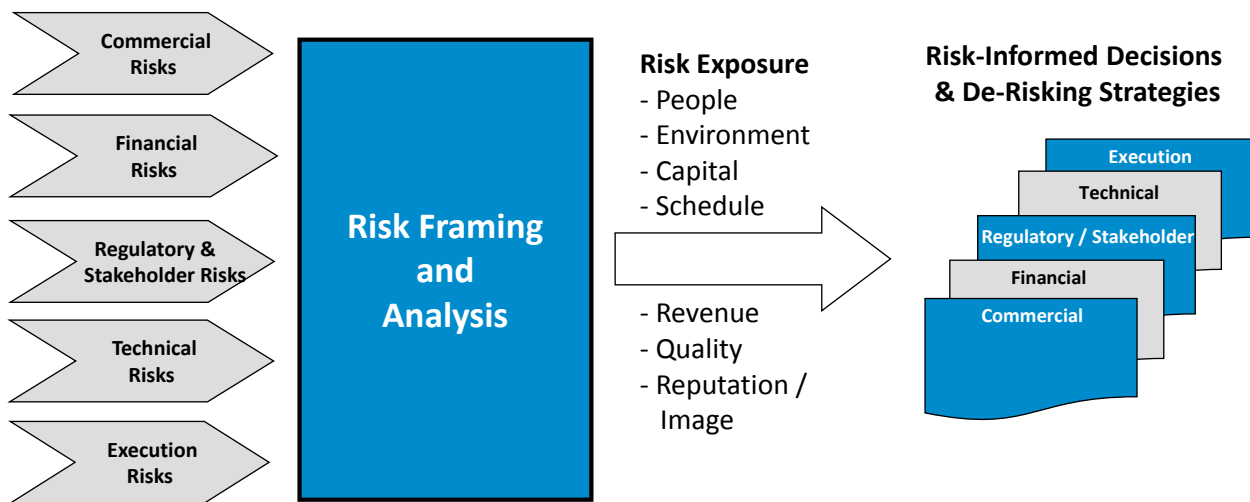
For ease of reference Key Deliverables are grouped under the categories of:

- Business
- Project Implementation
- Operations
- External

The Key Deliverable listings will be produced for each phase of the NE-LCP and will be maintained as revision controlled documents outside of this document.

In order to ensure status visibility of the Key Deliverables during a particular Gateway Phase, Attachment B.1 provides a sample template (traffic light format) that can be used for overall status reporting to the Gatekeeper.

Figure 5: Concept of Risk-Informed Decision Making



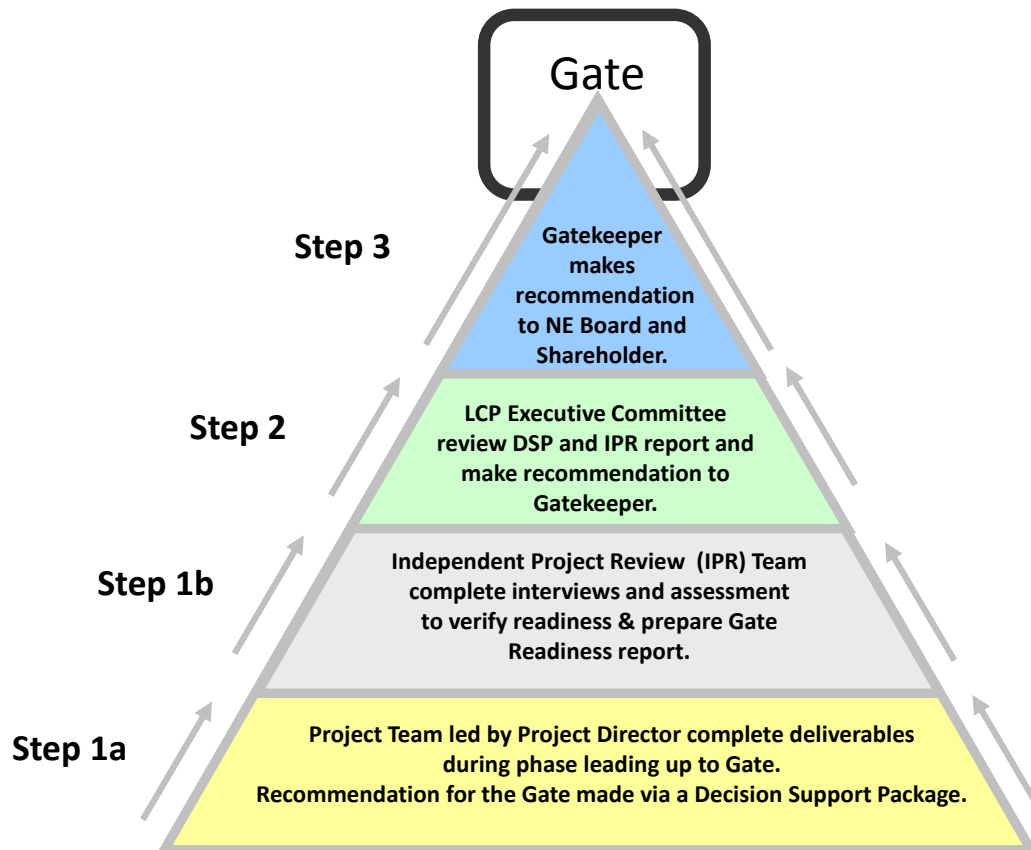
8.2 Decision Gate Support Package

In order to facilitate assessment of project readiness to move through a Decision Gate a Decision Gate Support Package (DGSP) shall be prepared by the Project Director. The DGSP includes the justification and support rationale and documentation for assessment of a go / no-go by the Gatekeeper. This includes the documentation of the evidence of completion and outcomes of Key Deliverables for the respective phase. Attachment B.2 provides a template of a typical DGSP.

Figure 6 illustrates the Decision Gate Assessment Process, which is made up of four sequential steps, culminating with a Gatekeeper recommendation to the Nalcor Energy Board of Directors and Shareholder. These steps are:

- Step 1a Readiness Recommendation by the Project Team.
- Step 1b confirmation of readiness recommendation following a third party verification by an Independent Project Review team.
- Step 2 confirms an Acceptance of Readiness by the Executive Committee.
- Step 3 approves that the Project is ready to move through the Decision Gate and onto the subsequent Gateway phase.

Figure 6: Decision Gate Assessment Process



In order to facilitate the Decision Gate Assessment Process, the NE-LCP will utilize Independent Project Review (IPR) Teams to provide an independent assessment of the quality of the Key Deliverables produced by the LCPMT.

With respect to IPRs the NE-LCP VP together with the Project Director will ensure the following:

- Reviews are conducted at the appropriate time and in the appropriate manner.
- Personnel with necessary competencies and experience are appointed to lead and participate in the reviews, and that availability of these personnel is secured to assure timely and adequate preparation for execution of the reviews.
- The review terms of reference are agreed with the Gatekeeper prior to the review.
- Preparation for reviews is undertaken in a timely manner.

It should be noted that the content of the DGSP, excluding the section addressing the IPR conclusions and recommendations, shall be available prior to the applicable decision gate review to allow adequate review by the IPR Team.

Attachments B.3, B.4 and B.5 provide templates of the sign-off sheets for each of Steps 2, 3 and 4.

8.3 Independent Project Reviews

Independent Project Reviews provide the degree of quality assurance required by the Gatekeeper for major decisions. The reviews are regarded as an opportunity to introduce external, constructive and holistic challenge to the Project team, and provide assurance that the Project will deliver the required business results. The conclusions and recommendations from IPR, as well as a gap closure plan, are included in the final DGSP when submitted to the Gatekeeper.

The objectives of the IPR are:

- To provide external challenge to the project team at each Decision Gate, to help assess the validity and robustness of the work done in key areas requiring focused attention and to assist in maximizing the value of the business opportunity.
- To assess the suitability of the project plans and strategies.
- To appraise the readiness and justification of the project to proceed into the next Gateway Phase.

IPRs can be initiated by the Gatekeeper outside of the pre-defined Decision Gates. Such reviews must have a clear objective and the end products must be clarified in a specified terms of reference for each review to be conducted.

The IPR team will be comprised of external individuals and Nalcor Energy personnel that are able to provide an independent assessment of the project. A major selection criterion will be the proper representation of all areas and disciplines in the review team. The IPR Leader and IPR team members will be approved by the Gatekeeper.

To ensure consistency and quality of approach, it is essential that personnel with the desired competencies and experience are appointed to lead the IPR. The following guidelines should therefore be adhered to when selecting the team leader:

- IPR Leader will be external to and independent of the project team.
- IPR Leader has experience in conducting similar types of reviews, preferably as the team leader.
- IPR Leader has broad knowledge and experience covering Technical, Commercial, Operational, and Project Management issues.

IPR Team Members:

- The level, number and types of resources should be commensurate to the nature, size and significance of the review.
- The IPR Team should include a member of the project team who can act to support the review and provide guidance. The specific areas of competencies of the IPR team will vary between the different reviews depending on the focus of the decision being made. However, it is critical that the resources should cover the full range of competencies including technical, environmental assessment, aboriginal, commercial, economic, operations, project management, and business issues.
- The IPR representatives should be senior personnel who have significant experience in their area of expertise.
- Several of the IPR Team members should have experience from similar types of reviews.

A.0 Activity Flowchart (Excel Format)

A.1 N/A

B.0 Attachments/Appendices**B.1 Template: Decision Gate Key Deliverable Status****B.2 Template: Decision Gate Support Package****B.3 Template: Decision Gate Step 1 – Declaration of Readiness****B.4 Template: Decision Gate Step 2 – Acceptance of Readiness****B.5 Template: Decision Gate Step 2 – Readiness Approval**



Lower Churchill Project

Status of Decision Gate X Key Deliverables

As of **Date**

●	Key Deliverable Achieved	<u>Readiness Status Legend</u>
●	Key Deliverable <u>Partially</u> Achieved, Remainder In-Progress, <u>Not</u> a Showstopper for Decision Gate	
●	Key Deliverable In-Progress - <u>Not</u> a Showstopper for Decision Gate	
●	Key Deliverable Not Achieved and Showstopper for Decision Gate	

Reference No.	Category	Key Deliverable	Status	Overall Status	Reference Documents (as required)
GX-KD-##	Engineering & Technical	Add "Title"	Add Commentary		Provide details.
GX-KD-##	Project Execution	Add "Title"	Add Commentary		Provide details.
GX-KD-##	Commercial	Add "Title"	Add Commentary		Provide details.
GX-KD-##	Commercial	Add "Title"	Add Commentary		Provide details.
GX-KD-##	Project Execution	Add "Title"	Add Commentary		Provide details.
GX-KD-##	Project Financing	Add "Title"	Add Commentary		Provide details.

DD-MMM-YYYY



Lower Churchill Project

Gatekeeper's Decision Support Package:

Request for Approval to Proceed to Gateway Phase X

This page intentionally left blank

Table of Contents

1.0	EXECUTIVE SUMMARY	5
1.1	Current Decision	5
1.2	Gateway Phase 2 Recommendation.....	5
1.3	Business Opportunity.....	5
1.3.1	Background	5
1.3.2	Current Situation	5
1.4	Strategic Fit and Alignment	5
1.5	Summary of Work Completed To-Date	5
1.5.1	Conclusions from Gateway Phase X	5
1.5.2	Recommendations from Gateway Phase X	6
1.5.3	Gateway Phase X Strategy	6
2.0	DEFINITIONS.....	6
3.0	ABBREVIATIONS AND ACRONYMS	6
4.0	APPLICATION OF THE GATEWAY PROCESS	7
5.0	BUSINESS CASE	10
5.1	The Need for the Project	10
5.2	Project Objectives.....	10
5.3	Project Cost Estimate.....	10
5.4	Economics of Recommended Development Scenario	10
5.5	Financing Strategy.....	11
5.6	Forward Looking Appropriation Plan.....	11
6.0	RECOMMENDED DEVELOPMENT SCENARIO	12
6.1	Project Scope	12
6.2	Project Schedule and Key Milestones.....	12
6.3	Project Delivery Strategy	12
6.4	Proposed Owner Organization	12
6.5	Key Strategic Risks and Management Strategies.....	12
7.0	READINESS TO PROCEED TO GATEWAY PHASE X	13
7.1	Declaration of Readiness	13
7.2	Verification of Readiness	14
8.0	PATH FORWARD	14

9.0	AUTHORIZATION TO PROCEED REQUEST	14
10.0	ATTACHMENTS	14
A.1:	Status of Decision Gate X Key Deliverables	14
A.2:	Declaration of Readiness for Decision Gate X	14
A.3:	IPA Pacesetter Review Summary Report.....	14
A.4:	Gate X Independent Project Review Report.....	14
A.5:	Readiness Acceptance Form for Decision Gate X.....	14
A.6:	Readiness Approval Form for Decision Gate X	14

Lower Churchill Project

Gatekeeper's Decision Support Package • Request for Approval to Proceed to Gateway Phase X

1.0 EXECUTIVE SUMMARY

1.1 Current Decision

This *Gatekeeper's Decision Support Package* for Decision Gate X of the Nalcor Energy Gateway Process requests authorization for the Lower Churchill Project (LCP or the Project) to pass through Decision Gate X and into Gateway Phase X for the

Add Project specifics

The readiness to move through Gate X for the scope identified is supported by achievement of the required prerequisite Key Deliverables for the Gate as well as the findings from an Independent Project Review team.

1.2 Gateway Phase 2 Recommendation

Add Project specifics

1.3 Business Opportunity

Add Project specifics

1.3.1 Background

Add Project specifics

1.3.2 Current Situation

Add Project specifics

1.4 Strategic Fit and Alignment

Add Project specifics

1.5 Summary of Work Completed To-Date

1.5.1 Conclusions from Gateway Phase X

Add Project specifics

1.5.2 Recommendations from Gateway Phase X*Add Project specifics***1.5.3 Gateway Phase X Strategy***Add Project specifics***2.0 DEFINITIONS**

Term	Definition
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.
Gatekeeper	The person responsible for making the decision at the Decision Gate of the Gateway Process.
Gateway Phase	Refers to the period between Gates during which the Project Team completes various work activities are completed in order to produce Key Deliverables required to move the Project forward.
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.

3.0 ABBREVIATIONS AND ACRONYMS

AFE	Authorization for Expenditure
DCF	Discounted Cash Flow
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPCM	Engineering, Procurement and Construction Management
FEL	Front-end Loading
GHG	Greenhouse Gas Emissions
HTGS	Holyrood Thermal Generating Station
HVac	High Voltage Alternating Current
HVdc	High Voltage Direct Current
IBA	Impacts and Benefits Agreement

Lower Churchill Project

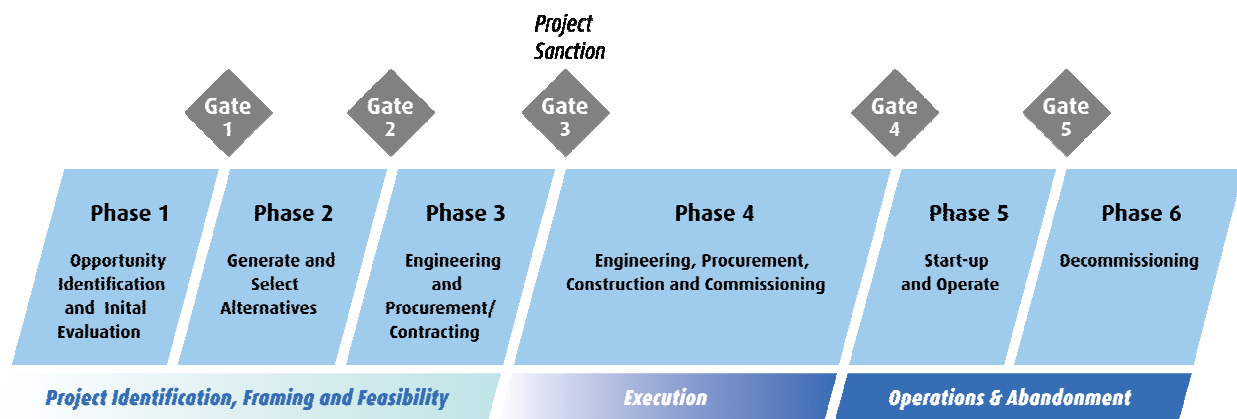
Gatekeeper's Decision Support Package • Request for Approval to Proceed to Gateway Phase X

IPA	Independent Project Analysis, Inc.
IPR	Independent Project Review
IRP	Integrated Resource Plan
IRR	Internal Rate of Return
MW	Megawatt
NE-LCP	Nalcor Energy Lower Churchill Project
NE-LCPMT	Nalcor Energy Lower Churchill Project Management Team
NLH	Newfoundland and Labrador Hydro
NPV	Net Present Value
OATT	Open Access Transmission Tariff
PEP	Project Execution Plan
PLF	Planning Load Forecast
PWC	Price Waterhouse Coopers
RACI	Responsible, Accountable, Consult and Inform
SOBI	Strait of Belle Isle
TWh	Terawatt hour
VSC	Voltage Source Converter

4.0 APPLICATION OF THE GATEWAY PROCESS

The Nalcor Energy Gateway Process, illustrated in Figure 1, is a staged or phased decision gate assurance process that is used to guide the planning and execution of the Project from identifying the opportunity through determining how it should be developed (e.g. transmission access, plant capacity, etc.), obtaining project approvals, completing engineering and commencing construction. It serves as a means of quality assurance for key decisions at crucial points in a project's lifecycle.

Figure 1: Gateway Process



The above phases of the Project are managed by cross-functional teams and are referred to as Gateway Phases, while the gates (known as Decision Gates) are structured decision points at

the end of each Gateway phase. The use of formal Decision Gates facilitates decision-making by the Gatekeeper of the readiness of a project to move from one Gateway phase to the next. For each Decision Gate there are a number of pre-determined Key Deliverables that have been agreed with the Gatekeeper. These Key Deliverables must be delivered to an acceptable quality in order to facilitate efficient and effective decision making at the applicable Decision Gate regarding the forward direction of the Project by the Gatekeeper.

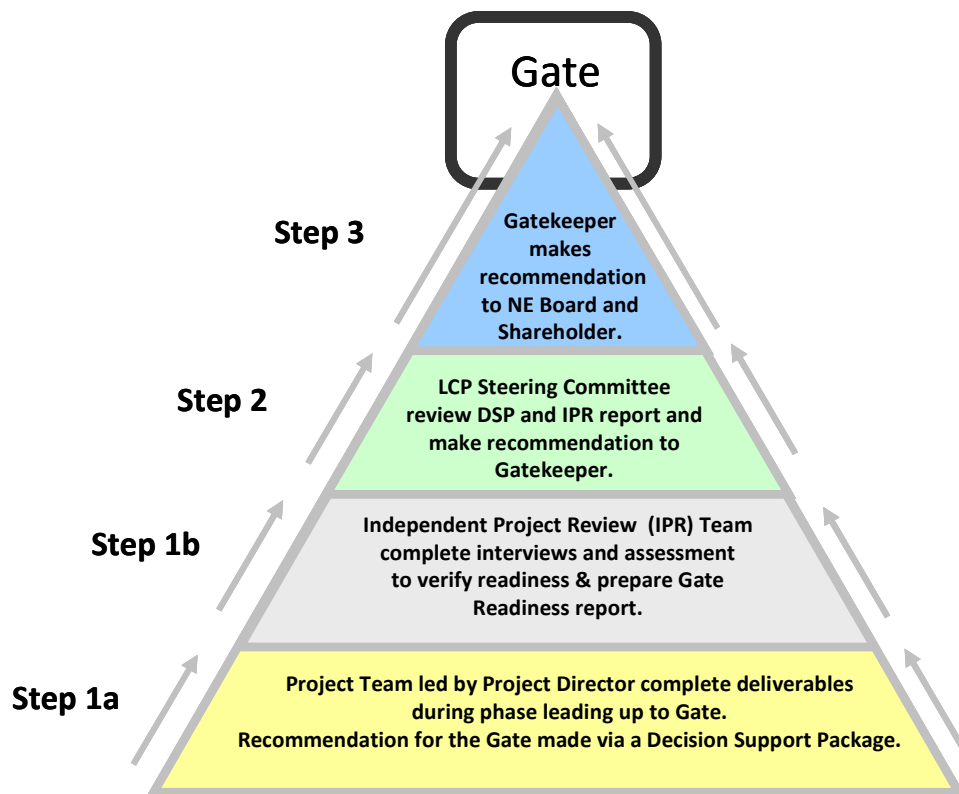
The Key Deliverables for each Gateway phase are developed specifically for the Project and are developed with consideration of both standard project execution best practice, but more importantly with the consideration of the overall risk spectrum and tolerance for the Lower Churchill Project. These Key Deliverables have been designed to address all Project focus areas and encompass commercial arrangements, financing, regulatory, environment, aboriginal affairs, engineering and technical, project execution and stakeholder management.

Add Project specifics

Figure 2 illustrates the Decision Gate Assessment Process, which is made up of four sequential steps, culminating with a Gatekeeper recommendation to the Nalcor Energy Board of Directors and Shareholder. These steps are:

- Step 1a Readiness Recommendation by the Project Team.
- Step 1b confirmation of readiness recommendation following a third party verification by an Independent Project Review team.
- Step 2 confirms an Acceptance of Readiness by the Steering Committee.
- Step 3 approves that the Project is ready to move through the Decision Gate and onto the subsequent Gateway phase.

Figure 2: Decision Gate Assessment Process



4.1 Independent Project Review

An IPR provides the degree of quality assurance by independent experts required by the Gatekeeper for major decisions. The reviews are regarded as an opportunity to assess readiness, to challenge the project team, and provide assurance that the project will deliver the required business results. The findings, observations and recommendations from the Decision Gate X IPR, as well as a gap closure plan, are included as part of this *Decision Support Package*.

The general objectives of an IPR are:

- To provide external challenge to the project team at each Decision Gate, to help assess the validity and robustness of the work done, the key areas requiring focused attention and to assist in maximizing the value of the business opportunity.
- To assess the suitability of the project plans and strategies.
- To appraise the readiness and justification of the project to proceed into the next Gateway phase.

5.0 BUSINESS CASE

5.1 The Need for the Project

5.2 Project Objectives

Add Project specifics

5.3 Project Cost Estimate

Add Project specifics

Table 1: Summary of Direct and Escalated Nominal Capital Costs (\$ Millions CDN)

	Project Component 1	Project Component 2	Project Component 3	Total
Direct 2010 \$ (=Base Estimate + Estimate Contingency + Strategic Risk Exposure) *Notional P50.				\$MM
Escalated Nominal \$				\$MM

5.4 Economics of Recommended Development Scenario

Add Project specifics

Table 2 presents several key metrics for the Project's economics.

Table 2: Project Economics – Key Metrics

Metric	Value of Muskrat Falls and Island Link, Island Demand Only
Capital Expenditure, nominal dollars, before interest during construction and fees	\$MM
Capital Expenditure, In-Service	\$MM
Equity Requirement, total	\$MM
Net Present Value (NPV) on capital, discounted at X.X%	\$MM

Internal Rate of Return (IRR) on capital	X.XX%
Dividends over 50 years from In-Service	\$MM

5.5 Financing Strategy

Add Project specifics

Table 3: Investment and Financing Profile (In-Service Cost including IDC)

\$billions	
Investments	
Project Component 1	\$MM
Project Component 2	\$MM
Project Component 3	\$MM
Total Investments	\$MM
Financing	
New Equity from NL	\$MM
Nalcor Cash Flow – Other	\$MM
New Debt – Island Link	\$MM
Non Capex Funding	\$MM
Other	\$MM
Total Financing	\$MM

*Totals may not add due to rounding

5.6 Forward Looking Appropriation Plan

Required funds for the Project will be provided using Nalcor's annual budget and business planning process, while capital required for project commitments will be appropriated at key schedule milestones via the approval of Authorization for Expenditure (AFE) requests. These milestones and the estimated funding required are summarized in Table 4.

Table 4: Project Authorization for Expenditure Milestones

Funding Step	Planned Date	Estimated Amount (M CDN \$)

6.0 RECOMMENDED DEVELOPMENT SCENARIO

6.1 Project Scope

Add Project specifics

6.2 Project Schedule and Key Milestones

Add Project specifics

6.3 Project Delivery Strategy

Add Project specifics

6.4 Proposed Owner Organization

Add Project specifics

6.5 Key Strategic Risks and Management Strategies

Add Project specifics

Table 4 lists the key strategic risks faced by the Project that are significantly influencing the execution strategy and management approach for the Project.

Table 4: Key Strategic Risks and Management Strategies

Strategic Risk	Management Strategy
Risk 1	<ul style="list-style-type: none"> •
Risk 2	<ul style="list-style-type: none"> •

7.0 READINESS TO PROCEED TO GATEWAY PHASE X

7.1 Declaration of Readiness

In accordance to the Summary of Overall Readiness for Decision Gate X, shown in Figure 5, the Project Team declares that the required level of readiness to develop the Phase I of the lower Churchill River has been achieved and that any remaining work associated with the Gateway Phase X is not considered to be a showstopper for the Decision Gate X consideration. Attachment A.1 provides a readiness report against the Gateway Phase Key Deliverables, as well as details any incomplete work being carried over to Gateway Phase X. Figure 5 provides a summary of the overall readiness status for Decision Gate X.

Figure 5: Summary of Overall Readiness for Decision Gate X

Attachment A.3 contains the Declaration of Readiness as endorsed by the Project Team.

Lower Churchill Project

Gatekeeper's Decision Support Package • Request for Approval to Proceed to Gateway Phase X

7.2 Verification of Readiness

Add details of findings and conclusions from any Independent Project Reviews

8.0 PATH FORWARD

Add summary

9.0 AUTHORIZATION TO PROCEED REQUEST

Attachment A.5 to this *Decision Support Package* contains Step 2 – Readiness Acceptance form for consideration of the Project Steering Committee. Following this acceptance of readiness, the Gatekeeper is requested to approve readiness to proceed through Decision Gate X by signing the Step 3 – Readiness Approval form (Attachment A.6).

We look forward to your endorsement of the Project to proceed through the Gate X.

10.0 ATTACHMENTS

- A.1: Status of Decision Gate X Key Deliverables**
- A.2: Declaration of Readiness for Decision Gate X**
- A.3: IPA Pacesetter Review Summary Report**
- A.4: Gate X Independent Project Review Report**
- A.5: Readiness Acceptance Form for Decision Gate X**
- A.6: Readiness Approval Form for Decision Gate X**

Decision Gate X

Step 1 - Declaration of Readiness

This is to declare / verify that the required level of readiness has been achieved and that any remaining work associated with the Gateway Phase X is not considered to be a showstopper for the Decision Gate X consideration. Where appropriate a readiness report and deficiency list is attached to address any incomplete work, to identify any work-around and/or mitigating steps taken.

Name	Position	Verification	Date	Comments

Remarks:

Decision Gate X

Step 2 - Acceptance of Readiness

This is to confirm that the required level of readiness has been achieved as shown in Step 1, and that any remaining work associated with the Gateway Phase X is not considered to be a showstopper for the Decision Gate X. Unless specifically noted, signature shall signify a recommendation to proceed.

Name	Position	Verification	Date	Comments

Remarks:



Decision Gate X

Step 3 - Readiness Approval

This Step 3 readiness form, when signed, provides an approval that the Decision Gate X has been achieved.

Name	Position	Verification	Date	Comments
	Gatekeeper			

Remarks: