National Energy Board

Office national de l'énergie

Reasons for Decision

KM LNG Operating General Partnership

GH-1-2011

October 2011

LNG Export

Canada

National Energy Board

Reasons for Decision

In the Matter of

KM LNG Operating General Partnership

Application dated 9 December 2010 for a long-term export licence to export liquefied natural gas under section 117 of the *National Energy Board Act* (NEB Act).

GH-1-2011

October 2011

Permission to Reproduce

Materials may be reproduced for personal, educational and/or non-profit activities, in part or in whole and by any means, without charge or further permission from the National Energy Board, provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that the National Energy Board is identified as the source institution; and that the reproduction is not represented as an official version of the information reproduced, nor as having been made in affiliation with, or with the endorsement of the National Energy Board.

For permission to reproduce the information in this publication for commercial redistribution, please e-mail: info@neb-one.gc.ca

Autorisation de reproduction

Le contenu de cette publication peut être reproduit à des fins personnelles, éducatives et/ou sans but lucratif, en tout ou en partie et par quelque moyen que ce soit, sans frais et sans autre permission de l'Office national de l'énergie, pourvu qu'une diligence raisonnable soit exercée afin d'assurer l'exactitude de l'information reproduite, que l'Office national de l'énergie soit mentionné comme organisme source et que la reproduction ne soit présentée ni comme une version officielle ni comme une copie ayant été faite en collaboration avec l'Office national de l'énergie ou avec son consentement.

Pour obtenir l'autorisation de reproduire l'information contenue dans cette publication à des fins commerciales, faire parvenir un courriel à : info@neb-one.gc.ca

© Her Majesty the Queen in Right of Canada 2011 as represented by the National Energy Board

Cat No. NE22-1/2011-4E
ISBN 978-1-100-19243-7

This report is published separately in both official languages. This publication is available upon request in multiple formats.

Copies are available on request from:
The Publications Office
National Energy Board
444 Seventh Avenue S.W.
Calgary, Alberta, T2P 0X8
E-Mail: publications@neb-one.gc.ca
Fax: 403-292-5576
Phone: 403-299-3562
1-800-899-1265

For pick-up at the NEB office:
Library
Ground Floor

Printed in Canada

© Sa Majesté la Reine du Chef du Canada 2011 représentée par l'Office national de l'énergie

N° de cat. NE22-1/2011-4F
ISBN 978-1-100-97914-4

Ce rapport est publié séparément dans les deux langues officielles. On peut obtenir cette publication sur supports multiples, sur demande.

Demandes d'exemplaires :
Bureau des publications
Office national de l'énergie
444, Septième Avenue S.-O.
Calgary (Alberta) T2P 0X8
Courrier électronique : publications@neb-one.gc.ca
Fax : 403-292-5576
Téléphone : 403-299-3562
1-800-899-1265

Des exemplaires sont également disponibles à la bibliothèque de l'Office
(rez-de-chaussée)

Imprimé au Canada

Table of Contents

List of Figures ii
List of Tables ii
List of Appendices ii
Abbreviations and Definitions iii
Recital and Appearances v

1. Introduction 1
1.1 Background 1
1.2 Summary of the Application 2
1.3 Summary of Proceeding 4
1.4 The Gitxaala Nation's Motion 4
1.5 The Fort Nelson First Nation's Motion 4

2. Regulatory Framework for Gas Export Licences 6
2.1 Market-Based Procedure 6
2.1.1 Public Hearing 7
2.1.2 Ongoing Monitoring 7
2.2 Applicability of the MBP to the Export of LNG 8

3. KM LNG's Application to Export Natural Gas in Liquefied Form 9
3.1 Applied for Exemptions under the Part VI Regulations 9
3.2 Supply 10
3.3 Transportation 13
3.4 Markets 14
3.5 Market-Based Procedure 15
3.5.1 Complaints Procedure 15
3.5.2 Export Impact Assessment 16
3.5.3 Other Public Interest Considerations 19
3.6 Licence Term and Conditions 21

4. Environment and Socio-Economic Matters and Consultation 22
4.1 Environment and Socio-economic Matters 22
4.1.1 Scope of the Board's Consideration of Environmental and Socio-economic Matters 22
4.1.2 The Board's Consideration of Environmental and Socio-economic Matters 24
4.2 Consultation 28

5. Disposition 31

List of Figures

1-1 Proposed Export Point, Pacific Trail Pipeline and Shipping Routes 3

List of Tables

1-1 Summary of Applied-for Licence 2
3-1 Reserves and Export Commitment 11
3-2 Project Deliverability and Licence Requirement 12

List of Appendices

I. List of Issues for GH-1-2011 Proceeding 32
II. Terms and Conditions of the Licence to be Issued for the Export of Liquefied Natural Gas 33
III. Legislation 35

Abbreviations and Definitions

10^3 m^3	thousand cubic metres
Act or NEB Act	*National Energy Board Act*
Apache	Apache Canada Ltd.
Applicant	KM LNG Operating General Partnership
Application	Application to the Board, pursuant to section 117 of the *National Energy Board Act* for a natural gas export licence
BC	British Columbia
BCEAO	British Columbia Environmental Assessment Office
Bcf	billion cubic feet
Bcf/d	billion cubic feet per day
BC OGC	British Columbia Oil and Gas Commission
BCUC	British Columbia Utilities Commission
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
CEA Act	*Canadian Environmental Assessment Act*
CIAC	Chemistry Industry Association of Canada
EIA	Export Impact Assessment
Encana	Encana Corporation
EOG	EOG Resources Canada Inc.
Galveston	Galveston LNG Inc.
Gitxaala	The Gitxaala Nation
Haisla Nation	The Haisla First Nation, also known as the Kitamaat Indian Band
IGCAA	Industrial Gas Consumers Association of Alberta
Joint EA	Joint Environmental Assessment conducted under the *Canadian Environmental Assessment Act* and British Columbia's *Environmental Assessment Act*
KLNG	Kitimat LNG Inc.

km	kilometre(s)
KM LNG	KM LNG Operating General Partnership
LNG	liquefied natural gas, or natural gas in liquefied form
LNG Partners	LNG Partners, LLC
m^3/d	cubic metres per day
MBP	Market-Based Procedure
MMcf/d	million cubic feet per day
Motion	26 April motion brought by the Gitxaala Nation
NGL	natural gas liquids
Part VI Regulations	*National Energy Board Act Part VI (Oil and Gas) Regulations*
PTP	Pacific Trail Pipeline
PTP LP	Pacific Trail Pipeline Limited Partnership
Reporting Regulations	*National Energy Board Export and Import Reporting Regulations*
Responsible Authorities	Transport Canada, Environment Canada, and Indian and Northern Affairs Canada
SPA	sale and purchase agreement
Spectra	Spectra Energy Transmission
Tcf	trillion cubic feet
TERMPOL	Transport Canada's TERMPOL Review Process
Terminal	the liquefaction terminal to be located at Bish Cove, near the Port of Kitimat, British Columbia
Terminal Owners	Apache Canada Ltd, Encana Corporation, and EOG Resources Canada Inc. or their affiliates
WCSB	Western Canada Sedimentary Basin
Western Accord	March 1985 agreement made among the Governments of Canada and the three Western producing provinces on the pricing and taxation of oil and gas
Ziff	Ziff Energy Group

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (Act) and the Regulations made thereunder;

AND IN THE MATTER OF an application filed with the National Energy Board on 9 December 2010 by KM LNG Operating General Partnership for approval of a long-term natural gas export licence under Part VI of the Act, under file OF-EI-Gas-GL-K083-2010-01 01;

AND IN THE MATTER OF Hearing Order GH-1-2011 issued on 7 February 2011;

Heard in Kitimat, British Columbia on 7, 8, 9 and 10 June 2011 and Calgary, Alberta on 13 and 14 July 2011;

BEFORE:

L. Mercier	Presiding Member
G. Habib	Member
D. Hamilton	Member

Appearances	**On behalf of**	**Witnesses**
Applicant		
G.M. Nettleton	KM LNG Operating General Partnership	J. McArdle
S. Duncanson		B. Helms
		R. Zemljak
		K. Patterson
		S. Bolks
		J. Bowman
		D. Thorn
		M. Limam
		K. Miyazaki
		M. Thompson
		S. Mauger
		C. Gingrich
		R. Priddle
		T. Joubert
		D. Fleming
		G. Goodman
		P. Tahmazian
		K. Olson
		K. Screen
		C. Marples
		R. Leslie
		H. Jung
		G. Graves

	D. Calvert B. MacIntyre N. Poole-Moffatt W. Prystay R. Byres

Associations

W. Koop	British Columbia Tap Water Alliance
C.B. Woods	Canadian Association of Petroleum Producers
D. Podruzny	Chemistry Industry Association of Canada
G. Sproule	Industrial Gas Consumers Association of Alberta
M. Langegger	Kitimat Rod and Gun Association

Companies

G.M. Nettleton S. Duncanson	Apache Canada Ltd.
L. Keough	EOG Resources
L. Keough	Encana Corporation
M.-F. Leroi	FortisBC Energy Inc.
C.W. Sanderson, Q.C.	LNG Partners, LLC
T. Taft	Nexen Inc.
D.P. Langen	Spectra Energy Transmission

First Nations

M. Edwards B. Parfitt	Fort Nelson First Nation
R. Janes V. Mathers	Gitxaala Nation
R. Millen	Haisla First Nation, also known as Kitamaat Indian Band

Governments

C. King	Alberta Department of Energy
R. Goffinet	District of Kitimat
L. Riddle	Transport Canada

Counsel to the National Energy Board

A. Hudson
P. Khan

Chapter 1

Introduction

1.1 Background

On 9 December 2010, KM LNG Operating General Partnership (KM LNG) filed an application (Application) with the National Energy Board (Board or NEB), under Part VI of the *National Energy Board Act* (NEB Act or Act), for a licence to export liquefied natural gas (LNG). This is the first LNG export licence that the Board has considered since the de-regulation of the natural gas market in 1985. The LNG would be exported from the proposed Kitimat LNG Terminal (the Terminal), to be located at Bish Cove, near the Port of Kitimat in British Columbia (BC), to markets primarily in the Asia Pacific region by marine vessel. Natural gas feedstock for the Terminal would be delivered from Spectra Station 4A near Summit Lake, BC to the Terminal by the proposed Pacific Trail Pipeline (PTP). KM LNG will seek authorization from the British Columbia Oil and Gas Commission (BC OGC) to build and operate the Terminal and the PTP.

Development of the Terminal is proceeding by way of an unincorporated joint venture. Apache Canada Ltd. (Apache), EOG Resources Canada Inc. (EOG) and Encana Corporation (Encana) or their affiliates participate in the joint venture (collectively the "Terminal Owners"). The Terminal Owners hold participating interests of 40 per cent, 30 per cent and 30 per cent respectively in the joint venture, and have corresponding entitlements to the physical capacity of the Terminal and the PTP.

KM LNG, a general partnership whose partners are Apache and Apache Canada KM ULC, will operate the Terminal under the terms of a Joint Operating Agreement made among the Terminal Owners. KM LNG has the responsibility of acquiring an export licence and all other necessary permits and licenses for the Terminal on behalf of the Terminal Owners. The Terminal Owners are responsible for providing gas to the Terminal and intend to obtain the required natural gas from their supply pools in the Western Canada Sedimentary Basin (WCSB) and market hubs in the WCSB. The proposed Terminal includes two liquefaction trains to be started up in stages (2015 and 2017/18) with an ultimate annual liquefaction capacity of 10 million tonnes, LNG storage tanks and marine loading facilities.

The concept of an LNG terminal in the Kitimat area is not new. In 2004, an LNG import terminal was proposed for the area by Kitimat LNG Inc. (KLNG), a wholly owned subsidiary of Galveston LNG Inc. (Galveston). KLNG actively pursued development of the import terminal from 2004 to 2010. In January 2010, KM LNG purchased a 51 per cent interest in the import terminal from KLNG. In May 2010, a wholly owned subsidiary of EOG acquired the shares of Galveston and thereby the remaining 49 per cent interest in the terminal. On 1 January 2011, KLNG, Galveston, EOG and other entities were amalgamated and continued in the form of EOG. On 31 March 2011, Encana acquired a 30 per cent ownership interest in the Terminal and the PTP. This transaction resulted in the current ownership structure described above in the second paragraph.

As a result of KLNG's efforts, the British Columbia Environmental Assessment Office (BC EAO) issued an Environmental Assessment (EA) certificate pursuant to the BC *Environmental Assessment Act* in June 2006 for an LNG import terminal near Kitimat, BC. In early 2007, the responsible federal authorities – Transport Canada, Environment Canada, and Indian and Northern Affairs Canada (the Responsible Authorities) – allowed the import terminal project to proceed in accordance with the *Canadian Environmental Assessment Act* (CEA Act).

In response to changing market conditions, the import terminal was modified into an export terminal. The Responsible Authorities did not require a new federal EA and the BC EAO amended the provincial EA certificate to address the change to an export terminal.

The PTP was subject to individual assessments under BC's *Environmental Assessment Act* and the CEA Act and it received the necessary approvals to allow the project to proceed to the regulatory stage in 2008 and 2009 respectively.

Figure 1-1 on the following page shows the proposed Terminal location, the PTP and proposed shipping routes from Kitimat to international waters.

1.2 Summary of the Application

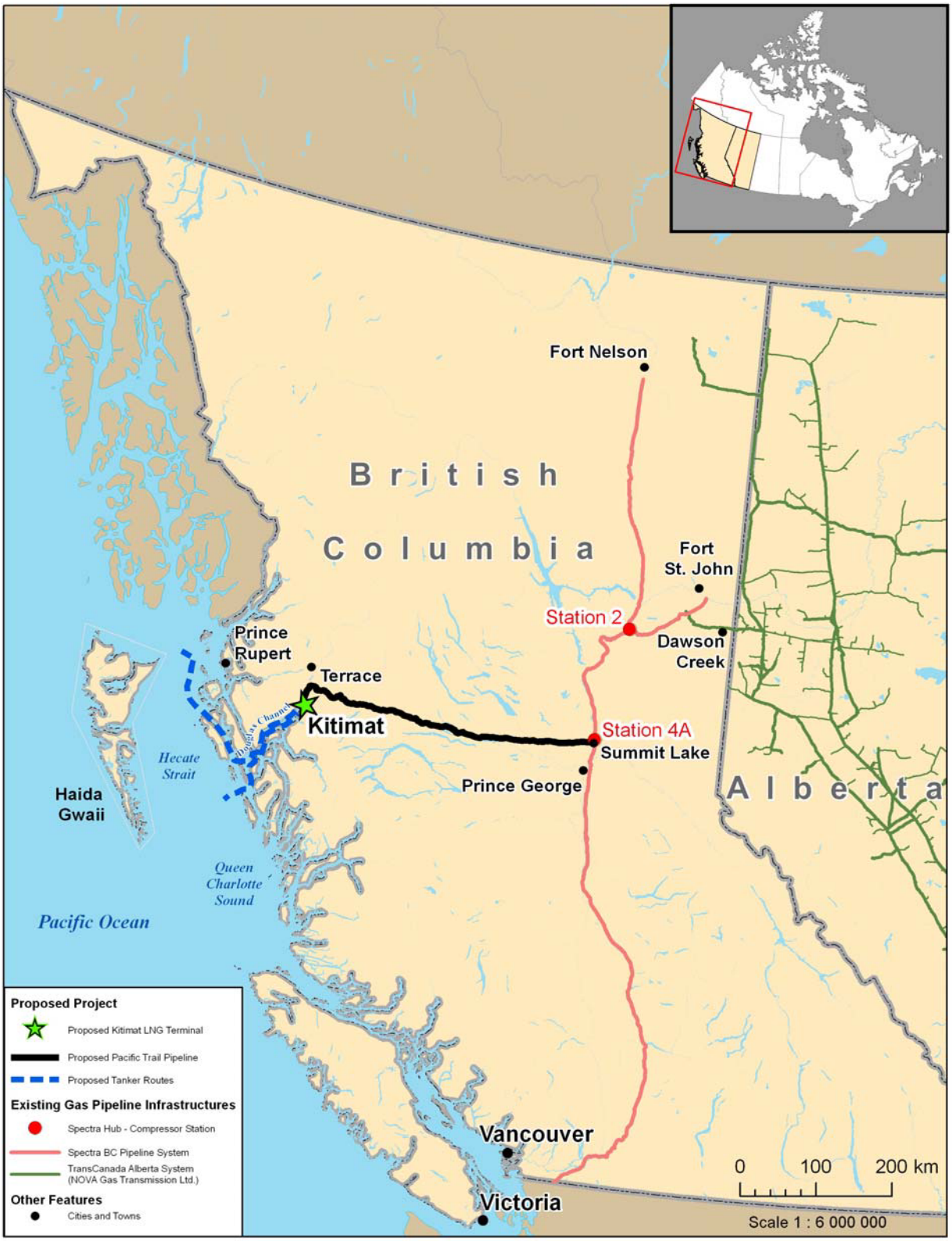
KM LNG applied for a licence term of 20 years and a maximum annual volume of 10 million tonnes of LNG, which is approximately equivalent to 13,300,000 10^3m^3 (468 Bcf) of natural gas.

Table 1-1 summarizes the terms and conditions requested by KM LNG.

Table 1-1
Summary of Applied-for Licence

Term	20 years, commencing on the first export of quantities under the Licence
Maximum Term Quantity	200 million tonnes of LNG, approximately equivalent to 265,000,000 10^3m^3 (9,360 Bcf) of natural gas
Maximum Annual Quantity	10 million tonnes of LNG, approximately equivalent to 13,300,000 10^3m^3 (468 Bcf) of natural gas
Annual Tolerance	10 per cent in any 12-month period
Daily Tolerance	N/A
Point of Export	Bish Cove, near the Port of Kitimat, BC, Canada

Figure 1-1
Proposed Export Point, Pacific Trail Pipeline and Shipping Routes



1.3 Summary of Proceeding

On 7 February 2011, the Board issued Hearing Order GH-1-2011 that established the Board's process for considering the Application. The Hearing Order included a List of Issues that the Board proposed to examine during the hearing. Following comments from Intervenors on the original List of Issues, the List of Issues was revised on 22 March 2011. The Revised List of Issues is included as Appendix I of these Reasons.

On 1 March 2011, Board staff hosted an information session in Kitimat, BC at the Riverlodge Recreation Centre where staff provided information to the public and Aboriginal groups on the hearing process and explained how to participate.

On 27 May 2011, the Board divided the oral hearing into two phases. Phase I of the oral hearing was held in Kitimat, BC on 7 to 10 June 2011 where the Board heard evidence on all issues on the Revised List of Issues except Issues #4 and #9.

Phase II of the oral hearing was held in Calgary, Alberta on 13 and 14 July 2011. Parties addressed evidence on Issues #4 and #9 and then provided final argument on the Application.

1.4 The Gitxaala Nation's Motion

On 26 April 2011, the Gitxaala Nation (Gitxaala) filed a motion seeking, among other things, a stay of the proceedings until KM LNG provided full and adequate responses to certain information requests (the Motion). The Board established a process to hear the Motion which included hearing oral argument on the Motion, as a preliminary matter to the oral hearing for KM LNG's Application.

At the oral hearing, Gitxaala and KM LNG indicated that they had a pending settlement which would result in the Motion being withdrawn. On 29 September 2011 Gitxaala confirmed the withdrawal of the Motion, withdrew its intervention, and requested that material it filed be removed from the record if possible. Accordingly, no ruling on the Motion is required. Although the Board has not removed the Gitxaala material from the record, because the material is unsupported, the Board has accorded it little weight in reaching its decision.

1.5 The Fort Nelson First Nation's Motion

In closing argument, the Fort Nelson First Nation requested that the Board adjourn this proceeding for 60 days. The Fort Nelson First Nation made this request to allow it to file evidence about potential environmental effects of shale gas development within the Horn River Basin. On 18 July 2011, the Board denied the Fort Nelson First Nation's adjournment request and indicated that it would provide its reasons for doing so as part of its Reasons for Decision on KM LNG's Application.

The Board denied the Fort Nelson First Nation's adjournment request because:

i) the 26 April 2011 deadline for filing evidence had long passed; and
ii) the Fort Nelson First Nation provided no explanation for missing that deadline or for waiting until final argument to bring its request for an adjournment.

In these circumstances, the Board finds that granting the adjournment would prejudice KM LNG's right to have its Application heard in a timely manner.

Chapter 2

Regulatory Framework for Gas Export Licences

Part VI of the NEB Act gives to the Board the authority to regulate natural gas exports.

In considering natural gas export licence applications, the Board is required by section 118 of the NEB Act to have regard to all considerations that appear to it to be relevant. The Board is also required to satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends in the discovery of gas in Canada.

Between 1959 and 1987, the Board used a succession of formulae to determine Canada's future natural gas requirements. The number of years of forward demand that the Board considered in these formulae changed during this period.

2.1 Market-Based Procedure

In March 1985, the Governments of Canada and the three Western producing provinces (BC, Alberta, and Saskatchewan) entered into an agreement on the pricing and taxation of oil and gas (Western Accord). This agreement established the principle that oil and gas prices would be determined by negotiation between buyers and sellers. The Western Accord led to the 31 October 1985 agreement on natural gas markets and prices (generally referred to as the Halloween Agreement) which set out the policy framework, including terms and conditions, under which gas export licences would be issued. The resulting deregulation of commodity markets made the formulaic surplus approach incompatible with the new, market-based approach to regulating the international trade of natural gas.

In July 1987, pursuant to a *Review of Natural Gas Surplus Determination Procedures* (GHR-1-87), the Board implemented a new surplus determination procedure, known as the Market-Based Procedure (MBP), to assess the merits of an application for a gas export licence. The MBP is founded on the premise that the marketplace will generally operate in such a way that Canadian requirements for natural gas will be met at fair market prices. The MBP was modified following subsequent public hearings GHW-4-89 and GHW-1-91. The modifications did not affect the premise on which the MBP was founded.

The MBP is designed to establish that the proposed export of natural gas is both surplus to reasonably foreseeable Canadian requirements and is in the public interest. The MBP consists of two components: a public hearing as required by the NEB Act and ongoing monitoring of Canadian energy markets. A description of the Board process used to assess gas export licence applications follows.

2.1.1 Public Hearing

The public hearing component of the MBP is comprised of three parts:

1) Complaints Procedure: The Complaints Procedure is based on the principle that gas should not be authorized for export if Canadians have not had an opportunity to buy gas for their needs on terms and conditions similar to those contained in the export application. The Board considers any complaint from Canadian natural gas market participants that they have not had the opportunity to buy gas on terms and conditions, including price, similar to those of the proposed export.

2) Export Impact Assessment (EIA): The focus of the EIA is to assist the Board in its determination of whether the Canadian energy market can adjust to incremental gas exports without causing Canadians difficulty in meeting their energy needs at prices determined in the market. The EIA sets out the impact of the proposed export on Canadian energy and natural gas markets.

3) Other Public Interest Considerations: In order to determine whether the proposed export is in the public interest, the Board considers any other factors that appear to it to be relevant including:

   - the likelihood that the licenced volumes will be taken;
   - the durability of the export sales contract;
   - whether the export sales contract was negotiated at arm's length;
   - producer support for the export application;
   - provisions in the export sales contract for the payment of the associated transportation charges on Canadian pipelines over the term of the export sales contract;
   - the appropriate length for an export licence having regard to the adequacy of gas supply and associated export sales and transportation contracts; and
   - the potential environmental effects of the proposed export and any social effects that would be directly related to those environmental effects.

The other public interest considerations noted above are examples of the factors that the Board normally considers when assessing the merits of gas export licence applications. However, in specific proceedings, the Board may also consider any additional factors that appear to it to be relevant in the circumstances.

2.1.2 Ongoing Monitoring

Under the MBP, the Board monitors Canada's natural gas supply and demand. Monitoring assists the Board in identifying where markets may not be functioning properly or where the evolution of supply and demand casts doubt on the ability of Canadians to meet their future energy requirements at fair market prices.

2.2 Applicability of the MBP to the Export of LNG

Views of the Parties

KM LNG maintained that the principles behind the MBP remained relevant and should be considered in the assessment of the Application. KM LNG emphasized that the assessment of facts in the context of the MBP required flexibility from the Board, taking into account the uniqueness of this Application.

EOG and Encana submitted that while the MBP has evolved through a series of decisions that were issued by the Board between 1987 and 1992, the fundamental underpinnings of the MBP remained intact. EOG and Encana emphasized that the MBP had always been applied in a flexible manner that responded to changing market conditions over the period since it was first implemented.

The Alberta Department of Energy and the Canadian Association of Petroleum Producers (CAPP) supported the applicability of the MBP to the export of LNG.

Views of the Board

The Board implemented the MBP in response to the deregulation of the natural gas market in Canada in 1985 and after the *Review of Natural Gas Surplus Determination Procedures* (GHR-1-87) decision. At the time of deregulation and up until now, exports of natural gas were through land-based pipeline systems.

The Board is required by section 118 of the NEB Act to satisfy itself that the proposed export of natural gas is surplus to reasonably foreseeable Canadian requirements. The Board's past interpretation of surplus determination in general and the MBP in particular, has been done in a flexible manner that responded to changing market conditions.

The Board is of the view that changing the physical state of natural gas to LNG does not require a separate surplus determination procedure. Under the NEB Act, the definition of 'gas' is inclusive of LNG. No parties argued against the application of the MBP in assessing KM LNG's Application. Consequently, the Board finds the application of the MBP to assess LNG export applications appropriate.

Chapter 3

KM LNG's Application to Export Natural Gas in Liquefied Form

3.1 Applied for Exemptions under the Part VI Regulations

Views of the Parties

KM LNG sought relief from the following three requirements of section 12 of the *National Energy Board Act Part VI (Oil and Gas) Regulations* (Part VI Regulations).

- pro forma contracts for each type of gas purchase contract (paragraph 12(b)ii));
- details of gas export sales contracts (paragraph 12(c)(i)); and
- details of transportation service contracts (subsection 12(e)).

KM LNG was of the view that, to the extent that natural gas will be purchased to satisfy the proposed licence, it would be transacted at liquid hubs through uniform, industry standard agreements. Therefore, KM LNG submitted that any gas it may purchase will be transacted in an efficient market and that this precludes the need for the Board to obtain this information.

Regarding gas export sales contracts, KM LNG stated that it was unable to include LNG sale and purchase agreements (SPAs) in its Application, asserting that negotiations could not be concluded until security of supply concerns with LNG buyers were first addressed through the issuance of a long-term export licence.

Apache and the other Terminal Owners expressed concern that requirements causing the disclosure of individual sale and purchase contracts would be viewed as unacceptable by LNG buyers and could thwart any opportunity of successfully reaching acceptable agreements. Apache and the other Terminal Owners supported KM LNG in modifying its Application so that LNG sales contracts would not be filed with the Board.

As to transportation service contracts, KM LNG submitted that transportation service contracts on the PTP were not being contemplated, due to the Terminal Owners' 100 per cent interest in the pipeline, including ownership and capacity rights.

While transportation arrangements between Spectra Station 4 and supply sources have not been finalized, discussions would be concluded in time to allow regulatory processes and construction to be completed by the in-service date of the Terminal. KM LNG asserted that the long-term SPA obligations will ensure adequate transportation arrangements will be in place when exportation of LNG commences.

Regarding LNG marine transportation, KM LNG submitted that shipping arrangements would be prepared after SPAs had been executed.

LNG Partners did not oppose the Board granting KM LNG's request for relief from the provisions of section 12 of the Part VI Regulations as requested. LNG Partners supported a general modification of the paragraph 12(c)(i) to allow filing of the SPAs in confidence.

Views of the Board

In the past, export licence applications examined by the Board targeted natural gas markets in the US and used land-based transmission pipelines. The sequence for attaining regulatory authorizations and contract commitments to effect past export proposals differs significantly from the sequence that is required of entrants to the global LNG market, such as KM LNG. Accordingly, the Board recognizes that not all of the filing requirements are relevant for this Application.

The record emphasizes that LNG buyers are seeking security of supply prior to the conclusion of SPAs. This includes the authorization from the NEB for a long-term licence to export natural gas. Given that global LNG markets are characterized by long-term bilateral arrangements, the Board is cognizant that adhering to the filing requirements may introduce an unwarranted level of risk for the Applicant. For these reasons, the Board grants KM LNG's request for exemption from filing details of gas export sales contracts.

The Board understands that the Terminal Owners cannot conclude transportation and gas purchase contracts until export market and supply requirements become better defined. The size of the financial investment that is required to facilitate the export proposal and the opportunity to participate in the global LNG market provides the assurance that sufficient incentive exists for the Terminal Owners to acquire marketable gas supplies and sufficient transportation capacity to achieve high utilization rates for the Terminal. Therefore, the Board grants KM LNG's request for exemption from filing contracts for each type of gas purchase arrangement and details of transportation service contracts.

3.2 Supply

As part of the Board's assessment, the Applicant is required to demonstrate the adequacy of the natural gas supply supporting the Application.

Views of the Parties

KM LNG referred to Article 8 of the Joint Operating Agreement that commits the Terminal Owners to keep the Terminal capacity at least 80 per cent utilized for the 20-year licence term.

In support of the Application, EOG and Apache demonstrated that they would supply their share of the licence volumes by primarily relying on their plans for resource development in northeast

BC, supplemented by their other holdings in western Canada. Encana indicated it would supply its share of the licence volumes from its holdings in BC and Alberta.

The Terminal Owners expect the sources of these resources will evolve over time in response to economics, new discoveries and acquisitions. Selections among the various sources are made to obtain the highest rate of return, and not with the objective of developing a specific area.

The Terminal Owners indicated they might purchase gas at liquid hubs from other producers to meet operational requirements on a short-term basis. The Terminal Owners indicated that, as exploration and production companies, they typically obtain greatest value from developing their own resources, rather than purchasing gas from other producers.

The Terminal Owners' proven and probable reserves amount to an estimated 445 billion m^3 (15.7 trillion cubic feet (Tcf)) and exceed volume required at the inlet of the Terminal of 289 billion m^3 (10.2 Tcf), as shown in Table 3-1. Moreover, the Terminal Owners indicated possible reserves plus contingent resources of 986 billion m^3 (34.8 Tcf).[1] The estimated total resources in western Canada controlled by these companies (established reserves, possible resources, contingent resources) are 1,431 billion m^3 (50.5 Tcf).

Table 3-1
Reserves and Export Commitment[1]

	Established Reserves		Export Commitment[2]	
	Billion m^3	Tcf	Billion m^3	Tcf
Apache	88	3.1	116	4.1
EOG	105	3.7	87	3.1
Encana	252	8.9	87	3.1
Total[3]	**445**	**15.7**	**289**	**10.2**

[1] Using conversion factor of 35.3 cubic feet per m^3.
[2] Total term requirement at inlet.
[3] Numbers may not add due to rounding.

In support of the Application, the Terminal Owners described potential upstream activities in the Horn River Basin to illustrate a potential source of incremental supply. These include drilling 150 wells in a typical year using roughly 12 drilling rigs. The companies expect to minimize their surface footprint by constructing well pads and drilling 12 to 16 wells from each well pad. Construction of all-season roads may be necessary to deliver materials and equipment to the well pads. The companies prepared their estimates assuming 15 to 20 hydraulic fracture stimulations per well. To the extent possible, the companies intend to minimize requirements for fresh water in the hydraulic fracturing process by using non-potable sources such as salt water, and recycling.

1 Contingent resources are quantities estimated as of a given date to be potentially recoverable from known accumulations using established technology or technology under development but which are not currently considered to be commercially recoverable due to one or more contingencies.

The Terminal Owners projected that their production from their western Canada properties will significantly exceed the applied-for licence volumes on a daily and annual basis as illustrated in Table 3-2.

Table 3-2
Project Deliverability and Licence Requirement[1]

	Projected Deliverability		Licence Requirement	
	Million m^3/d	MMcf/d	Million m^3/d	MMcf/d
Apache	20.9 – 35.2	739 – 1,243	8.3 – 16.2	292 – 573
EOG	14.1 – 21.4	498 – 754	5.9 – 11.9	210 – 420
Encana	42.7 – 88.0	1,506 – 3,106	5.9 – 11.9	210 – 420

[1] Using conversion factor of 35.3 cubic feet per m^3.

The BC Tap Water Alliance expressed concern about the reliability of shale gas production, due to its relatively short operating history. Concerns were raised regarding the potential for shale gas resources to be economically non-viable outside of concentrated core areas. In addition, shale gas wells would be depleted more quickly and recover less gas than anticipated, and constraint on water usage or hydraulic fracturing would limit access to the resource.

Views of the Board

The Board notes Article 8 of the Joint Operating Agreement, which contractually binds the Terminal Owners to keep the Terminal capacity at least 80 per cent utilized for the 20-year licence term. This, in the Board's view, would provide an incentive to the Terminal Owners to have supplies available.

The Board notes that EOG and Apache intend to supply their share of the licence volumes by primarily relying on their resource development in northeast BC, supplemented by their other holdings in western Canada. Encana intends to supply its share of the licence volumes from its holdings in BC and Alberta. The Terminal Owners indicated they may purchase gas at liquid hubs from other producers to meet operational requirements on a short-term basis. The Board considers supply diversification beneficial in the event of supply interruptions.

The Board is satisfied that the size of the resource and the planned upstream activities by the Terminal Owners will provide natural gas productive capacity above requested licence volumes on a daily and annual basis. Terminal Owners' proven and probable reserves amount to an estimated 445 billion m^3 (15.7 Tcf), exceeding the proposed export licence volume of 289 billion m^3 (10.2 Tcf). Production in excess of the licence volumes would be available to serve markets elsewhere in North America.

> The Board is mindful that shale gas development in northeast BC is in its infancy; however, the Board is cognizant of the large resource potential and the significant investments that companies are undertaking to develop these resources. Drilling efficiency, well performance and safety of operations continue to benefit from ongoing technological progress and are likely to further enhance potential gas supplies. It is likely that shale gas in northeast BC will represent a significant incremental source of natural gas production in the future.

3.3 Transportation

As part of the Board's assessment, the Applicant is required to provide a description of the transportation arrangements, existing or proposed, that are required to move the natural gas to market.

Views of the Parties

KM LNG submitted that natural gas produced in BC and Alberta would be available to the Terminal through a combination of physical transportation and commercial arrangements. KM LNG indicated that the Terminal Owners would be responsible for the delivery of natural gas supply to the Terminal and would enter into all transportation contracts necessary to deliver natural gas to the Terminal.

As mentioned in section 3.1 of these Reasons, KM LNG stated that the Terminal Owners are aware of the need for additional pipeline capacity on the Spectra BC Pipeline and are engaged in discussions with Spectra Energy Transmission (Spectra) to ensure that the facilities are approved, constructed and completed in a timely manner.

The proposed PTP will interconnect with Spectra's T-South system at Station 4A, and transport the natural gas to the Terminal. The PTP is proposed to be a 36-inch diameter pipeline, approximately 464 km in length, able to transport up to 39.7 million m^3/d (1.4 Bcf/d). The estimated cost of the PTP is $1.1 billion.

KM LNG stated that the capacity on the PTP is planned to be for the sole purpose of delivering natural gas to the Terminal. KM LNG's evidence emphasized that the PTP will be a fit-for-purpose pipeline and is not contemplated to be toll regulated. KM LNG stated that a pipeline permit application to the BC OGC will be filed no later than the first quarter of 2012. The Terminal Owners plan to contract for firm transportation service on the PTP to meet their requirements for the Terminal.

KM LNG indicated that the proposed PTP will be owned by the Pacific Trail Pipeline Limited Partnership (PTP LP). Apache holds a 40 per cent interest in the PTP LP, while EOG and Encana each hold 30 per cent. The First Nations Limited Partnership has a right to acquire an equity position in the PTP LP, but will not hold capacity ownership.

From the Terminal, the LNG will be transported by tanker carriers to markets in the Asia Pacific region. The LNG will be sold either free on board at the Terminal outlet or delivery ex ship at the market. The LNG SPAs will dictate which party is responsible for arranging LNG tankers.

LNG Partners urged the Board that any expansion on the Spectra BC Pipeline must take a long-term view of future transportation demands on its system.

Views of the Board

The Board is satisfied with KM LNG's description of the transportation arrangements that will be required to move the proposed volumes of gas to market.

The Board recognizes that the Terminal Owners have an ownership interest in the PTP through PTP LP and thus have an intrinsic interest to make sure that the facility is built in accordance with their supply obligations. KM LNG has indicated that PTP LP will be applying for a pipeline permit with the BC OGC no later than the first quarter of 2012.

The Board regulates Spectra's BC Pipeline system and any expansions to that system, not just those associated with this export proposal, will require Board approval. Expansions of the Spectra BC Pipeline system may be required if the proposed export is to materialize. The Board, upon an application by Spectra, will examine whether any proposed facilities are required for the public convenience and necessity.

3.4 Markets

As part of the Board's assessment, the Applicant is required to provide a description of the market to be served by the proposed exportation.

Views of the Parties

KM LNG submitted that it will follow a traditional LNG business model that includes the marketing and selling of LNG directly to Asia Pacific buyers who seek large volume and long-term firm SPAs. This type of alignment provides the security of demand for the seller, which is required to underpin the large scale financial investment, as well as security of supply for the LNG buyer.

Long-term supply reliability was identified to be a cornerstone requirement of Asia Pacific LNG buyers. KM LNG stated that LNG buyers see KM LNG's access to the highly liquid North American natural gas market as an opportunity because it contributed to project longevity, which distinguishes KM LNG from other LNG projects.

LNG sold under new long-term supply contracts to the Asia Pacific market is currently priced around 90 per cent of oil on an equivalent heat-value basis. In Asia, oil is considered to be a substitute fuel to natural gas and oil prices are considered a regional energy price benchmark.

The Asia Pacific region is proposed as KM LNG's primary market for both commercial and geographic reasons and KM LNG indicated it is well placed to gain regional market share. KM LNG retained Poten & Partners Inc. to provide a written assessment of the LNG demand in the international markets relevant to KM LNG. The Applicant expects demand for LNG in Asia Pacific markets to grow on average by 2.7 per cent per year between 2014 and 2035, driven primarily by gas-fired power generation growth in China, Japan, South Korea and Taiwan. Starting around 2015, when KM LNG's Terminal is projected to come on-stream, a supply deficit emerges between long-term contracts and forecast demand. The capacity of KM LNG's Terminal represents approximately 8 per cent of the global LNG supply deficit currently forecast for 2035.

No parties took an opposing view regarding the information submitted by KM LNG about its proposed markets for LNG that would be exported from the Terminal.

Views of the Board

The Board recognizes that forecast demand growth for LNG in the Asia Pacific region provides a new opportunity for Canadian producers to diversify their export markets. The Board also recognizes that long-term oil-indexed sales contracts could provide for higher netbacks to Canadian producers. While the Board notes the existence of competing sources of global LNG, given the size of Canada's natural gas resource, proximity to markets in Asia and Canada's stable political and regulatory environment, the Board is of the view that KM LNG has the opportunity to compete in the global LNG market.

Having regard to the size and potential growth of the Asia Pacific market, the Board concludes that the proposed export volume is likely to flow.

3.5 Market-Based Procedure

3.5.1 Complaints Procedure

Views of the Parties

KM LNG understood the intent of the Complaints Procedure was to provide Canadian market participants with an opportunity to examine various elements of the export proposal, including price. Key information concerning KM LNG's export proposal has been made available to Canadian gas market participants through the following:

- KM LNG's Application, which was filed with the NEB on 9 December 2010.
- Hearing Order GH-1-2011, which required notice of the Application to be published in newspapers across Canada. The Application was accessible via the Internet to the public, including Canadian gas market participants.
- The GH-1-2011 proceeding, which afforded all interested persons an opportunity to participate in the hearing process.

- The Application, which described the volume of natural gas to be processed at the KM LNG Terminal; the volume of LNG to be produced and contracted; the key contractual conditions under which the exports will be made; and that exports would be transported via LNG vessels.
- The Applicant indicated that due to the significant capital requirements for the development of the overall project, the price for the LNG under these arrangements would, with certainty, exceed Canadian and North American natural gas prices.

KM LNG was of the view that the export proposal was likely to be of little interest to Canadian natural gas buyers given the fundamental shift in Canadian gas markets away from large volume long-term supply arrangements in favour of short-term transactions.

KM LNG stated that if a Canadian market participant wanted to acquire the specific gas supply that Terminal Owners were delivering to the Terminal to meet their capacity obligations, the following terms and conditions would have to be met: a long- term purchase agreement of up to 20 years, an oil indexed purchase price, and a sizeable volume.

KM LNG submitted that it was unaware from the Terminal Owners of any Canadian market participant who had expressed an interest either in obtaining LNG under conditions similar to those in the export proposal or in acquiring natural gas from the supply that they are committed to provide on a long-term basis as feed for the Terminal.

Views of the Board

The Board finds that KM LNG provided a reasonable level of information about the proposed export. The record indicates that the proposed exportation of gas would not occur on terms and conditions, including price, more favourable to the export market than to a Canadian market participant. Furthermore, a notice of the Hearing Order was published in newspapers across Canada to provide Canadians with the opportunity to participate in the proceeding.

The Board notes that no parties came before the Board to complain that they did not have an opportunity to purchase natural gas on terms and conditions, including price, similar to those of the proposed export. For this reason, the Board concludes that the intent and objectives of the Complaints Procedure have been satisfied in this Application.

3.5.2 Export Impact Assessment

As part of the Board's assessment, the Applicant is required to provide an assessment of the impact of the proposed exportation on Canadian energy and natural gas markets to determine whether Canadians are likely to have difficulty in meeting their energy requirements at fair market prices.

Views of the Parties

KM LNG concluded that the proposed export is not expected to adversely affect the ability of Canadians to meet their energy requirements over the proposed licence term. KM LNG's testimony indicated that Canadian natural gas requirements would in part be supplied from the US. KM LNG submitted a Natural Gas Demand and Supply Forecast prepared by the Ziff Energy Group (Ziff) which showed that the development of new sources, primarily shale gas in Quebec and northeastern US, would have the effect of displacing some long-haul WCSB gas from its eastern North American markets. KM LNG also maintained that the market share of Canadian gas in US markets was shrinking and that gas exports to the US were forecast to decline. KM LNG's conclusion that Canadian supply along with projected US imports would be adequate to meet forecast Canadian domestic and export demand.

KM LNG provided an EIA report prepared by Mr. Roland Priddle that concluded that the proposed export would not likely cause Canadians difficulty in meeting their energy requirements at fair market prices, and that fair market prices would result from the efficient operation of markets. Given the present and anticipated functioning of the North American natural gas market and the relatively small volume of gas proposed to be exported in relation to this market, KM LNG concluded that the proposed export will have a minimal impact on Canadian energy and natural gas consumers.

The BC Tap Water Alliance expressed concern for the inclusion of gas production from undeveloped sources such as Alaska, the Mackenzie Delta and Quebec as part of Canadian natural gas supply.

The Chemistry Industry Association of Canada (CIAC) submitted that the Board should have regard to whether the quantity of natural gas liquids (NGL) exported as entrained in LNG does not exceed the surplus remaining after Canadian requirements are met. CIAC also urged the Board to consider whether approving the Application would negatively impact further opportunities for pursuing either deep cut or straddle plant operations. Lastly, CIAC recommended that the Board consider if the NEB's Filing Manual checklist requires clarification for the export of natural gas (which includes propane, butanes and ethane) in the form of LNG.

CIAC recommended that the Board impose a condition where KM LNG will have to report actual NGL volumes and composition contained in the exported LNG.

The Industrial Gas Consumers Association of Alberta (IGCAA) argued that without a specific dedicated supply for the proposed licence, it was difficult to assess the impact on throughputs and tolls on existing pipelines, or if the Canada energy market would be able to adjust. IGCCA indicated it will rely on the Board's ongoing monitoring of Canadian energy markets.

The BC Ministry of Energy and Mines, Alberta Department of Energy and CAPP all supported KM LNG's Application as being in the public interest to allow access to new markets that Canadian producers need in order to develop their natural gas resource base. CAPP relied on KM LNG's evidence that there is ample supply to meet Canadian demand, and consequently the export proposal is surplus to the foreseeable requirements of Canadians.

LNG Partners urged the Board to conclude in its decision that sufficient natural gas exists in the WCSB to warrant development of Pacific Rim markets and the infrastructure necessary to facilitate that development. By expressing such a conclusion, LNG Partners was of the view that the Board would be providing what amounted to an EIA based on the evidence in this proceeding, which would stand until the Board has reason in evidence before it to reach some other conclusion.

KM LNG emphasized that if supply forecasts from specific areas provided in the EIA did not materialize, it meant that other reserves in North America were more competitive.

Regarding the issues raised by the CIAC, KM LNG stated that there was no evidence to suggest that the proposed export will affect the supply of NGL for Canadian market participants or that the export will impede Canadians' abilities to compete for NGL. Illustrating that the market is working properly, KM LNG citied the Vantage Pipeline Project (OH-3-2011) proceeding as being illustrative of Canadian market participants actively seeking supplies of NGL.

KM LNG stated that the Board should not impose the licence condition requested by the CIAC because KM LNG's Application is not for the export of NGL and because there is no evidentiary basis upon which the Board could impose such a condition. KM LNG argued that the quality of natural gas to be exported would be a function of upstream activities, which are dependent upon the economics of these activities, but have nothing to do with the export licence. KM LNG did state that it would be willing to disclose the average heating value of the aggregate export volumes from the Terminal on a quarterly basis, thus providing information that may assist the CIAC and the Board in monitoring NGL markets.

With respect to the EIA issues raised by LNG Partners, KM LNG was of the view that there were risks associated with relying on evidence that had been adduced and considered in a NEB proceeding, because witnesses would not be able to answer questions about that evidence. KM LNG stated that this risk should be borne by the party that is intending to use that evidence, not the NEB.

Views of the Board

The Board recognizes that the reports prepared by Ziff and Mr. Priddle were based on extensive subject-area expertise and information available at the time the Application was filed. The Board finds both reports useful.

The Board notes that Ziff's market assessment is generally consistent with the Board's own market monitoring and that of the US Energy Information Administration. The Board confirms that there are significant changes that are currently taking place in the North American natural gas market and that these changes are attributable to increased supply from sources such as shale gas. The Board is also cognizant of changing natural gas flows in North America and the effect this could have on Canadian production. In particular, the Board recognizes that the exports out of the WCSB to eastern markets have been declining while imports from the US have risen. The Board notes that this is indicative of ongoing market

functionality and expects that US natural gas will continue to supply a portion of Canadian demand.

The Board agrees with the Applicant's conclusion that the export of the proposed term volume is unlikely to cause Canadians difficulty in meeting their energy requirements at fair market prices. Since deregulation in 1985, North American gas markets have functioned efficiently and there is no evidence to suggest that they will not continue to do so in the future. In addition, the proposed export volume is relatively small compared to overall North American supply. At any rate, the Board will continue to monitor markets to satisfy itself that Canadian requirements are being met at fair market prices.

The Board is of the view that should development of specific sources of supply not materialize over the proposed licence term, the Board is confident that market prices will adjust and will provide the appropriate incentive to accelerate development of other existing or alternative supplies.

Based on all of the foregoing, the Board is satisfied that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of gas in Canada.

The Board notes that there is no surplus determination requirement for the export of NGL. The Board's ongoing monitoring of Canada's NGL industry indicates a well functioning market and no evidence to the contrary had been submitted as part of this proceeding. The Board notes that under the *National Energy Board Export and Import Reporting Regulations* (Reporting Regulations), licence holders are required to report the average heating value of the gas exported, permitting the monitoring of NGL entrained in the exported LNG.

3.5.3 Other Public Interest Considerations

Board decisions are based on consideration of the Canadian public interest, which refers to a balance of economic, environmental and social interests that change as society's values and preferences evolve over time. As a regulator, the Board must estimate a proposal's overall public good and its potential negative aspects, weigh its various impacts, and make a decision. Economic public interest considerations are described below, while environmental and social public interests are discussed in Chapter 4.

Views of the Parties

KM LNG argued that Canadian public interest will be served by allowing Canadian gas producers to participate and trade in international markets. Changing market conditions in North America would require Canadian producers to find new markets in order to continue to develop

their reserves. The Asia Pacific market would provide Canadian producers with that opportunity, promoting international trade.

KM LNG indicated that development of the natural gas resource base in western Canada would be accelerated by means of increased access to export markets. Benefits to Canadians would include job creation and economic growth, as well as spin-off benefits for local communities and First Nations that are situated in proximity to the Terminal, the PTP and the areas where incremental natural gas is produced.

The Applicant stated that Apache, EOG and Encana are in active arm's length negotiations with several potential buyers in the Asia Pacific region and that the pricing and all other terms will reflect the operation of a competitive market. The long-term take-or-pay contracts will provide revenue to LNG sellers and security of supply to buyers.

In a letter of comment, Mr. Peter King encouraged the approval of the export licence for economic, social and environmental diversification, locally and worldwide.

Views of the Board

The Board notes that the pre-deregulated North American natural gas market is similar to the current global LNG market to the extent that long-term contracts are required to justify upstream infrastructure investment and provide downstream security of supply. Long-term contracts are standard business practice in the global LNG market, into which, Canada is a potential new entrant. Both the Terminal and the PTP are being designed to meet the long-term commitments that the Terminal Owners are currently marketing to Asia Pacific buyers. For these reasons, the Board finds the 20-year term of the licence to be appropriate.

The Board notes that KM LNG's export proposal will provide for contract durability. KM LNG indicated to the Board that Parties to LNG sales contracts are sophisticated, and accordingly, the contract terms will contain provisions for adjusting to changing market conditions. Also, contract prices will recover costs incurred in Canada, such as those associated with the Terminal and the PTP. The Applicant maintained that contracts are being negotiated at arm's length. The financial investment by the Terminal Owners in the Terminal and the PTP will provide the incentive to operate the facilities at high rates of utilization. Lastly, the take-or-pay contracts, which continue to characterize Asia Pacific markets, will create obligations between contracting parties so that export volumes will be taken.

The Board is of the view that the proposed export will not only open new markets for Canadian gas production, but that ongoing development of shale gas resources in BC and Alberta will ultimately further increase the availability of natural gas for Canadians.

3.6 Licence Term and Conditions

Views of the Parties

KM LNG requested a 10 per cent annual tolerance to the amount of gas that may be exported in any 12-month period and stated that such a tolerance would allow it to manage the variability in the quantity of LNG that could be produced at the Terminal.

KM LNG requested a sunset clause of the fourth quarter of 2019 and stated that this date will provide KM LNG with sufficient flexibility, given the size and complexity of the project.

KM LNG also requested, in the event that an export licence is granted, that KM LNG be exempt from the filing requirements of the Reporting Regulations. Instead of filing monthly information to the Board, KM LNG proposed that it be obligated to file the following information on a quarterly basis:

- aggregate volumes of LNG shipped from the Terminal;
- aggregate value, expressed in Canadian dollars, of the export revenue;
- average heating value of the aggregate export volume; and
- breakdown of the total aggregate export volume by destination country as designated at the time LNG is loaded at the Terminal.

Views of the Board

The Board accepts KM LNG's requests for a 10 per cent annual tolerance and a sunset date of the fourth quarter of 2019 as reasonable.

The Board confirms that every holder of an export licence is subject to the reporting requirements pursuant to the Reporting Regulations. The Board notes that under subsection 129(1.1) of the NEB Act, the Board may exempt a company or person from the application of the Reporting Regulations.

The Board has decided to grant KM LNG's request for exemption from the Reporting Regulations. The Board accepts, as reasonable, KM LNG's quarterly reporting of the aggregate volumes of LNG shipped from the Terminal; the aggregate value, expressed in Canadian dollars, of the export revenue; the average heating value of the aggregate export volume; and the breakdown of the total aggregate export volume by destination country as designated at the time the LNG is loaded at the Terminal. Accordingly, the Board will issue an order exempting KM LNG from the Reporting Regulations upon Governor-in-Council approval of the issuance of a gas export licence to KM LNG.

Chapter 4

Environment and Socio-Economic Matters and Consultation

4.1 Environment and Socio-economic Matters

KM LNG's export licence Application does not require an environmental assessment under the CEA Act. However, the Board identified for discussion in this proceeding consideration of the potential environmental effects of KM LNG's proposed exportation and any social effects that would be directly related to those environmental effects, including effects to Aboriginal interests. The Board also noted in Paragraph 11 of its Hearing Order that "to the extent that the Kitimat LNG Terminal facilities and the Pacific Trail Pipeline have already undergone federal and provincial environmental assessment processes, the Board will not re-examine these completed environmental assessments."

4.1.1 Scope of the Board's Consideration of Environmental and Socio-economic Matters

Views of the Parties

KM LNG, EOG, Encana, LNG Partners, CAPP and the Fort Nelson First Nation all addressed how the Board should consider environmental and directly related social effects in this proceeding.

KM LNG submitted that the Board should not revisit the completed environmental assessments and should not compel KM LNG to conduct an environmental assessment.

KM LNG argued that the legislative scheme should inform how the Board considers potential environmental and directly related social effects in a gas export licence proceeding.

KM LNG noted that the Board has, in the past, applied a "necessary connection" test to determine what potential environmental and directly related social effects to consider in a gas export licence proceeding. KM LNG argued that circumstances have changed since that test was established in the GH-5-93 Review. It noted that the Board is no longer required to conduct an environmental assessment for gas export licence applications because those applications, unlike certain facilities applications, do not trigger an environmental assessment under the CEA Act. Instead, KM LNG argued that the Board should give parties an opportunity to adduce evidence about environmental effects of the proposed export that were not the subject matter of completed environmental assessments.

EOG, Encana, LNG Partners and CAPP either supported KM LNG's argument or made similar arguments.

The Fort Nelson First Nation referred to the "necessary connection" test from the GH-5-93 Review to argue that the Board must consider potential environmental and directly related social effects of upstream activities when deciding whether to issue a gas export licence to KM LNG.

Views of the Board

The Board recognizes that an application for a gas export licence does not trigger an environmental assessment under the CEA Act. However, that does not preclude the Board from considering potential environmental effects and directly related social effects of gas exports when assessing the application.

The Board's consideration of Issue #4 mirrors the information that applicants must supply the Board in support of a gas export licence application. The Part VI Regulations require applicants for gas export licences to provide information respecting potential environmental effects of the proposed exportation and any social effects that are directly related to those environmental effects.

The Board has applied the "necessary connection" test in at least eight gas export licence decisions since the CEA Act was enacted.[2] In doing so, the Board recognized that the NEB Act has sufficient authority for considering environmental effects of a proposed export.[3] The Act gives the Board wide authority to determine what is relevant to an application for a gas export licence. Section 118 of the NEB Act requires the Board to have regard to all considerations that appear to it to be relevant.

Based on the foregoing, the Board is not persuaded that legislative change has been such that it should not consider potential environmental effects of the proposed export and any social effects directly related to them.

The Board will consider environmental and related social effects of a proposed export if those effects are necessarily connected to the exportation. As the Board discussed in the GH-5-93 Review, for a necessary connection to exist, the proposed export and the new facilities or activities must be integrated to the extent that they form part of a single course of action. Applying that test to the circumstances of this case, the Board finds that there is a necessary connection between the gas export licence and the following activities and facilities. These activities and facilities will be undertaken and constructed for the sole purpose of exporting gas under the licence from Canada:

---

2 GH-1-95, pp. 4, 13, 25 and 34; GH-4-95, pp. 5 and 7; GHW-1-96, p. 6; GHW-2-96, p. 6; GHW-1-97, pp. 4 and 6; GHW-2-97, p. 4, GH-1-99, pp. 3 and 13; GH-1-2008 p. 6 and 21-22.

3 GH-1-95, pp. 11-12

a) Marine shipping activities – Marine vessels are required to remove LNG from Canada, without which there would no export of Canadian natural gas.

b) The Terminal – The existence of the Terminal depends on an export licence issued by the Board. Without the licence, KM LNG would not construct the Terminal.

c) The PTP – The PTP is to be designed and built for the single purpose of supplying the full capacity of natural gas required by the Terminal.

Therefore, the Board finds these facilities or activities are closely tied to KM LNG's export proposal such that together they form a single course of action.

4.1.2 The Board's Consideration of Environmental and Socio-economic Matters

KM LNG Terminal and Pacific Trail Pipeline

Views of the Parties

KM LNG argued that no evidence was placed on the record to suggest that there are any environmental effects directly connected to this proposed export that have not already been addressed by the appropriate regulatory agencies.

KM LNG noted that the Terminal and the PTP were subject to provincial and federal environmental assessments. The Terminal's environmental assessment identified potential environmental and socio-economic effects of the Terminal, including effects on the marine, terrestrial, fresh water and atmospheric environments, among other things. Authorities conducting the Terminal EA concluded that construction and operation of the Terminal, along with other activities, will likely not cause significant adverse environmental effects and that practical means have been identified to prevent or reduce potential adverse effects to an acceptable level. Both the Terminal and the PTP were approved to proceed to the regulatory stage.

KM LNG noted that the BC OGC would be the primary regulator overseeing construction and operation of these facilities. KM LNG stated that production and storage facilities required for the full export volume would be situated within the Terminal footprint that was assessed as part of the joint environmental assessment conducted under the CEA Act and the BC *Environmental Assessment Act* (Joint EA). KM LNG stated that it did not expect the proposed second stage of the Terminal to enable the full export volume would require additional assessment under the CEA Act. KM LNG also stated that it was consulting with the BC EAO regarding any required amendments to its provincial EA certificate.

KM LNG committed to offering employment, contracting and training opportunities to communities near the Terminal.

KM LNG was advised that the PTP LP concluded an agreement with the First Nations Limited Partnership, a group of 15 First Nations who have traditional lands along the pipeline route. This agreement allows these First Nations to benefit from and invest in the pipeline project.

The Haisla Nation argued that KM LNG proposes to build the Terminal on Haisla reserve lands and this will result in lease payments and property tax revenue. The Haisla emphasized that independent sources of revenue are critical to support, among other things, health, education and community development. The Haisla also noted that there are business and employment opportunities associated with the development. Likewise, KM LNG noted that its impacts and benefits agreement with the Haisla Nation will consider Haisla employment, training, procurement, taxation, long-term leasing, decommissioning and environmental stewardship to address any potential impacts on Haisla interests.

The Kitimat Rod and Gun Association requested that KM LNG and its partners establish a fish and wildlife 'legacy' program for the area. In response, KM LNG committed to working with the Kitimat Rod and Gun Association to explore a partnership and stated that it and its partners are committed to investing in the communities where KM LNG operates. KM LNG noted that it already supported some community initiatives and would set aside funds to support others, after a positive final investment decision.

Views of the Board

The Board acknowledges the economic benefits associated with KM LNG's project. These include employment opportunities from the development of the Terminal and the PTP.

The Board has considered the potential environmental effects and any directly related social effects of the Terminal and the PTP. The information provided in this proceeding, including the Joint EA, provides evidence of those effects and their mitigation. The record also indicates that other agencies, federal and provincial, will continue to assess any environmental and social effects associated with these projects. The Board is of the view that duplicating the work of these other agencies is not warranted.

Marine Shipping Activities

Views of the Parties

KM LNG provided information about how the Joint EA and commitments contained therein considered potential environmental and socio-economic effects associated with marine shipping. KM LNG acknowledged that the spatial boundary for some valued environmental components related to the marine environment was limited to an area near the Terminal. However, KM LNG noted that additional commitments required it to consider environmental and socio-economic effects along the entire proposed shipping routes. For example, KM LNG provided information such as a vessel wake study that concluded vessel wave heights are small compared to naturally occurring wind-generated waves within Douglas Channel and will not have a significant effect

on shoreline erosion or other marine traffic operating in the area. KM LNG also provided additional information about how potential effects on marine mammals caused by shipping and related mitigation were considered in the Joint EA including requirements for follow-up and reporting. KM LNG also provided information on the regulation of marine shipping in Canada and how KM LNG will address matters such as shipping safety and navigation, ballast water discharge, and accident prevention and emergency response.

KM LNG noted that it is participating in Transport Canada's TERMPOL Review Process (TERMPOL) and that it must implement all of the recommendations from the TERMPOL Review Committee's final report.[4] KM LNG committed to preparing additional or expanded studies considering environmental and socio-economic effects as part of TERMPOL. These studies would go beyond the scope of a traditional TERMPOL review, which focuses on shipping safety and accident prevention. One such study noted by Transport Canada was an assessment of submarine noise and impacts on marine mammals, including the potential for vessel strikes. The spatial boundaries for TERMPOL include waters along or adjacent to the proposed vessel routes within Canada's territorial waters.

KM LNG submitted that mitigation measures developed as a result of the Joint EA and those identified through TERMPOL would make sure that potential environmental effects resulting from marine shipping would be fully mitigated and the Board does not need to further consider such effects.

The Haisla Nation, EOG and Encana, CAPP, and LNG Partners either supported KM LNG's argument or made similar arguments.

Views of the Board

The Board is of the view that potential environmental effects and directly related social effects have been considered in the Joint EA or will be considered through TERMPOL. The Board recognizes that there are federal and provincial processes in place to monitor compliance, follow-up, and reporting on KM LNG's commitments and conditions. In addition, the Board recognizes that Canada's legislation regulating marine shipping activities is "a permit by rule" regulatory system in that it provides a standard set of detailed rules and conditions for marine shipping activities. Issues such as safety, environmental protection and navigation are all dealt with under this detailed body of law and must be complied with for marine shipping activities to take place within Canada.

Based on the foregoing, the Board is of the view that duplicating the work conducted under the relevant federal and provincial legislation and processes is not warranted and that the Board has been able to adequately consider the environmental and related social effects in making a decision on the export licence.

4 The TERMPOL Review Committee includes representatives from Transport Canada, Fisheries and Oceans Canada, Environment Canada, Canadian Wildlife Service, the Haisla Nation, the BC Coast Pilots, Pacific Pilotage Authority, Canadian Coast Guard, and Aboriginal and Northern Development.

Upstream Gas Activities

Views of the Parties

The Fort Nelson First Nation and the BC Tap Water Alliance expressed concerns about potential environmental and socio-economic effects associated with upstream gas development in northeast BC. The BC Tap Water Alliance's concerns were focused on potential environmental effects caused by hydraulic fracturing operations associated with gas development in this region.

The Fort Nelson First Nation expressed concern that intensive natural gas developments in the Horn River Basin may result in significant harm to freshwater and groundwater resources, delicately balanced muskeg ecosystems, and wildlife habitat and populations. The Fort Nelson First Nation also argued that gas development will ultimately compromise its traditional way of life on lands it has occupied since time immemorial and create economic hardship for Fort Nelson First Nation members.

The Fort Nelson First Nation submitted that there is a necessary connection between the proposed gas export and gas development in northeast BC, and the Horn River Basin in particular. It submitted there was a strong probability that if the export licence were approved, development of gas reserves in the Horn River Basin will be increased and accelerated. This development would adversely affect the Fort Nelson First Nation's Aboriginal and treaty rights. The Fort Nelson First Nation also asked that if the Board finds that the necessary connection test was not met then the Board should apply the test flexibly in light of the high probability that the upstream activities will take place in the traditional territory of the Fort Nelson First Nation.

In response, KM LNG stated that there was no particular supply pool dedicated to the proposed export, nor would any supply source be necessarily developed if the export licence was approved. Further, KM LNG stated that even if there was a direct connection, the Board could rely on the existing regulatory scheme in BC to address any environmental and socio-economic concerns associated with upstream gas development.

Views of the Board

The Board has considered whether there is a necessary connection between particular upstream producing areas such as the Horn River Basin and the exportation of LNG under the proposed licence. Apache, EOG and Encana have indicated that the gas to support the proposed licence:

- will come from existing and future corporate supply pools from a number of areas within the WCSB;
- does not come from any sources dedicated solely for the purpose of the proposed exportation; and
- may come from gas purchased from market hubs or obtained through swaps from other producers.

Apache, EOG and Encana have also indicated that they would develop their corporate supply pools, including gas from the Horn River Basin,

irrespective of whether the export licence was approved. However, they indicated that the export licence may affect the rate at which they develop their supply sources. The Board cannot determine whether gas from producing wells from the supply sources identified, such as the Horn River Basin, will fill domestic demand, US demand or offshore demand for the export licence.

The Board recognizes that the producers supplied information about their corporate supply pools to demonstrate that they had the capacity to supply the export licence over its term. The submission of this information does not create a necessary connection between the exportation and any particular upstream development. The composition of those supply pools may very well change over the course of the licence as economic conditions dictate and it is not evident to the Board that gas will come from particular pools.

For the foregoing reasons, the Board does not find a necessary connection between the gas export licence and gas development activities in the Horn River Basin. Therefore, the Board will not consider potential environmental and socio-economic effects associated with gas development in that area.

Even if there were a necessary connection between the gas export licence and Apache's and EOG's upstream gas development in northeast British Columbia (which the Board does not find on the facts of this Application), the Board recognizes that the Province of British Columbia regulates upstream oil and gas development in that area. The Board is satisfied that there is a comprehensive regulatory and environmental assessment scheme that will consider environmental and socio-economic effects related to development in the Horn River Basin.

4.2 Consultation

The Board expects applicants that come before it to consult with those potentially impacted by their projects and activities. In this proceeding, the Board decided to consider consultation with the public and Aboriginal people where it may be required in relation to matters outlined in Issue #4 on the List of Issues.[5]

5 Issue #4: Consideration of the potential environment effects of the proposed exportation and any social effects that would be directly related to those environment effects, including any such effects to Aboriginal interests, as qualified in paragraph 11 of the Hearing Order.

Views of the Parties

In its Application, KM LNG stated that it had undertaken extensive consultation as part of the development of both the Terminal and PTP projects. Specifically, in regard to the Terminal, it met with local business and municipal leaders, the BC Marine Pilots and the District of Terrace Council; and held open houses in both Kitimat and Kitamaat Village.

In addition, KM LNG met with all individuals who had expressed interest in the export licence hearing to discuss any concerns. Two community updates on the project were distributed and a project office was opened in Kitimat. KM LNG has committed to ongoing discussions with the Haisla Nation, the Coastal First Nations and Gitxaala, as well as ongoing relationships with other interested parties. KM LNG also developed a five-step plan to consult with interested parties during TERMPOL.

The Kitimat Valley Naturalists commented that they were not notified of the change from an import to an export terminal. In response, KM LNG indicated that the BCEAO incorporated a public comment period regarding this change in December 2008 and that KM LNG had held additional public information sessions in the community to promote awareness of the change. KM LNG indicated that it subsequently met with the Kitimat Valley Naturalists to present them with additional information about the project and is committed to involve the group in future project planning.

The Haisla Nation submitted that it has been and will continue to be an essential participant in the determination of the future of the KM LNG project. The Haisla Nation stated that it was involved in and satisfied with the process for the environmental assessment of the Terminal and will continue to be consulted with, and involved in, TERMPOL.

The Fort Nelson First Nation raised a concern about the lack of consultation regarding the potential adverse effects of the upstream gas development within the Nation's traditional territory. EOG and Apache responded that no upstream consultation had taken place, primarily because the applicants could not say specifically where the gas will come from. The companies stated that they would consult with potentially affected First Nations when the upstream projects are identified. The partners also stated that these future consultation efforts would comply with any BC OGC Consultation Process Agreements with Treaty 8 First Nations and individual company consultation plans.

At the Board's direction, KM LNG published the Hearing Order in newspapers across Canada to ensure that all Canadians were notified of the Application and afforded the opportunity to participate in the proceeding.

Views of the Board

The Board is satisfied that KM LNG has consulted adequately with Canadians in general, and local residents and Aboriginal groups specifically, regarding the export licence.

The Board is of the view that KM LNG has been responsive to those parties interested in the proceeding and that KM LNG's consultation program for the Terminal, the PTP and TERMPOL have been, and will continue to be an adequate forum for concerns to be raised and addressed.

As to the upstream activities, the Board is satisfied that KM LNG and its partners have committed to consult with any First Nations where new gas supply developments may occur.

Chapter 5

Disposition

The foregoing chapters constitute our Reasons for Decision in respect of the Application heard by the Board in the GH-1-2011 proceeding.

For these reasons, the Board:

DECIDES to issue a licence to export liquefied natural gas with the terms and conditions described in Appendix II of these Reasons to KM LNG Operating General Partnership, subject to the approval of the Governor in Council.

L. Mercier
Presiding Member

G.A. Habib
Member

D. Hamilton
Member

October 2011
Calgary, Alberta

Appendix I

List of Issues for GH-1-2011 Proceeding

1. Application of the Market-Based Procedure (MBP) to assess the merits of KM LNG's application to export natural gas.

2. Overseas gas markets and the need to furnish gas export sales contracts.

3. Status of the required regulatory authorizations for the Kitimat LNG Terminal and the Pacific Trail Pipeline (PTP).

4. Consideration of the potential environmental effects of the proposed exportation and any social effects that would be directly related to those environmental effects, including any such effects to Aboriginal interests, as qualified in paragraph 11 of the Hearing Order.

5. Adequacy of natural gas supply to support the volumes and term of the applied-for licence.

6. Board authorization to omit the information required by section 12 of the *National Energy Board Act Part VI (Oil and Gas) Regulations.*

7. The terms and conditions to be included in any approval of the long-term licence that the Board may issue.

8. The adequacy of pipeline transportation arrangements and the impact on Board regulated facilities.

9. Consideration of consultation with the public and Aboriginal peoples where it may be required in relation to matters outlined in Issue #4.

Appendix II

Terms and Conditions of the Licence to be Issued for the Export of Liquefied Natural Gas

General

1. KM LNG Operating General Partnership (KM LNG) shall comply with all of the terms and conditions contained in this Licence unless the Board otherwise directs.

Licence Term, Conditions and Point of Export

2. Subject to Condition 3, the term of this Licence shall commence on the date of first export from the KM LNG operated liquefaction terminal, which is to be located at Bish Cove, near the Port of Kitimat, British Columbia, Canada (the Liquefaction Terminal) and shall continue for a period of 20 years thereafter.

3. The term of this Licence shall end on 31 December 2019, unless exports from the Liquefaction Terminal commence on or before that date.

4. The quantity of LNG that can be exported under the authority of this Licence is:

   a) Annual quantity not exceeding 10,000,000 tonnes, which is the approximate natural gas equivalent of 13,300,000 10^3 m^3 or 468 Bcf.

   b) Term quantity not exceeding 200,000,000 tonnes, which is the approximate natural gas equivalent of 265,000,000 10^3 m^3 or 9,360 Bcf.

   c) As a tolerance, the amount of LNG that may be exported in any 12-month period may exceed the annual quantity by 10 per cent.

5. Natural gas will be exported at a point on the outlet side of the Liquefaction Terminal.

6. After the date of first export, KM LNG must submit a quarterly return to the Board, by the dates set out in the table below, over the term of this Licence. However, KM LNG may file its first return on the submission date that first occurs three months after the date of first export. KM LNG's first return must provide information from the date of first export until the end of the applicable period.

Submission date	For the preceding period
January 31	October 1 – December 31
April 30	January 1 – March 31
July 31	April 1 – June 30
October 31	July 1 – September 30

7. Each return must contain the following information:

a) the gas export licence number;

b) the point of export;

c) the total volumes of natural gas in cubic metres, exported under the licence during the period. KM LNG must calculate the volume of natural gas exported by converting LNG to its equivalent in natural gas in accordance with section 9 of the *National Energy Board Export and Import Reporting Regulations* (Reporting Regulations);

d) the aggregate value at the international border of all natural gas exported during the period. The value must be expressed in Canadian currency;

e) the average heating value of all natural gas exported during the period. The average heating value must be expressed and determined in accordance with section 9 of the Reporting Regulations;

f) a breakdown by destination country of the total volume of natural gas exported during the period. The destination country shall be the country designated at the time that the LNG is loaded on marine vessels from the outlet side of the Liquefaction Terminal; and

g) the name, telephone number and email address of the person that prepared the return.

8. KM LNG must keep a copy of each return submitted to the Board for a period of three years from the end of the quarter to which the return relates.

Appendix III

Legislation

National Energy Board Act

PART VI
EXPORTS AND IMPORTS
DIVISION I
OIL AND GAS

Issuance of licences

117. (1) Subject to the regulations, the Board may, on such terms and conditions as it may impose, issue licences for the exportation or importation of oil or gas.

Compliance

(2) Every licence is subject to the condition that the provisions of this Act and the regulations in force at the date of issue of the licence and as subsequently enacted, made or amended, as well as every order made under the authority of this act, will be complied with.

Criteria

118. On an application for a licence, the Board shall have regard to all considerations that appear to it to be relevant and shall

(a) satisfy itself that the quantity of oil or gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of oil or gas in Canada; and

(b) [Repealed, 1990, c. 7, s. 32]

(c) where oil or gas is to be exported and subsequently imported or where oil or gas is to be imported, have regard to the equitable distribution of oil or gas, as the case may be, in Canada.

PART II
GAS
DIVISION I
GAS OTHER THAN PROPANE, BUTANES AND ETHANE

Information to be Furnished by Applicants for Licences for Exportation

12. An applicant for a licence for the exportation of gas shall furnish to the Board all the information that is necessary for the Board to dispose of the application, including, unless otherwise authorized by the Board,

(a) the terms that the applicant is requesting for the licence, including
- (i) the duration of the licence,
- (ii) the maximum daily, annual and term quantities of gas proposed to be exported,
- (iii) if applicable, the tolerance levels that are necessary to accommodate temporary operating conditions, and
- (iv) the points of exportation of the gas from Canada;

(b) information respecting the applicant's gas supply supporting the proposed exportation, whether contractually dedicated or undedicated, including
- (i) a summary of the quantities of gas under contract to or owned by the applicant, including daily and annual volumes, reserves and the termination date of every such contract, and
- (ii) a copy of each pro forma contract for each type of gas purchase contract;

(c) information respecting the applicant's gas market, including
- (i) details of the applicant's gas export sale, including
  - (A) a copy of every gas export sales contract for the proposed exportation,
  - (B) a detailed summary of the terms and conditions of every such contract, including the details of the matters referred to in Schedule I, substantially in the form set out therein, and
  - (C) the name of a person to whom questions respecting the details of every such contract may be directed, and
- (ii) a description of the export market to be served by the proposed exportation;

(d) where the gas proposed to be exported is from a gas supply other than a contractually dedicated pool, field or area, a gas supply and demand balance for the reserves supporting the application, on both an aggregate and an annual basis for the duration of the proposed exportation, identifying all firm contractual commitments supported by those reserves;

(e) details of the transportation arrangements pertaining to the proposed exportation, including

(i) the details and status of all contractual arrangements for the movement of the gas in and outside Canada,
(ii) a copy of every transportation contract for the movement of the gas in Canada, and
(iii) a description of any existing or proposed gathering, storage or transmission facility, and of any new facility other than a gathering, storage or transmission facility, that is required to move the gas to market, whether the facility is, or will be, in or outside Canada,

(f) information respecting the potential environmental effects of the proposed exportation and any social effects that would be directly related to those environmental effects;

(g) an assessment of the impact of the proposed exportation on Canadian energy and natural gas markets to determine whether Canadians are likely to have difficulty in meeting their energy requirements at fair market prices;

(h) a copy of, or details of the status of, each approval or authorization of a federal, provincial or state government pertaining to
(i) the removal of gas from a province,
(ii) the importation of gas into the country of destination,
(iii) transportation services,
(iv) tariffs and tolls,
(v) facilities,
(vi) environmental reviews, and
(vii) contractual arrangements necessary for the exportation of gas; and

(i) a status sheet summarizing the contractual arrangements and regulatory approvals and authorizations, substantially in the form set out in Schedule II.

National Energy Board Export and Import Reporting Regulations

Keeping Returns

3. A copy of each return required to be submitted to the Board pursuant to these Regulations shall be kept by the person submitting the return for a period of three years from the month to which the return relates.

Gas

4. Subject to sections 5 and 6, every holder of a licence or an order for the exportation, importation, exportation for subsequent importation or importation for subsequent exportation of gas shall submit to the Board, on or before the last day of each month, a return for the previous month that contains, for each licence or order, the following information set out by point of exportation or importation:

(*a*) the licence number or order number;
(*b*) the total quantity exported or imported;
(*c*) the highest quantity exported or imported in any one day during the month;
(*d*) the average heating value of the gas exported or imported;
(*e*) the value or price, at the international border, of all gas exported or imported, expressed in Canadian currency;
(*f*) the name of the export customer of the gas exported or the name of the seller of the gas imported;
(*g*) the province in which the gas was produced for all gas exported and the country and state in which the gas was produced for all gas imported;
(*h*) the transportation costs associated with the gas exported;
(*i*) whether the exportation or importation of gas was firm or interruptible;
(*j*) the geographical region within a country of destination to which gas was exported or within Canada for gas that was imported; and
(*k*) the name and telephone number of the person who prepared the return.

Units of Measurement

9. (1) For the purposes of these Regulations, all gas shall be measured in units of measurement that meet the requirements of the *Electricity and Gas Inspection Act*, and

(a) in the case of volume measurement, shall be expressed as the number of cubic metres the gas would occupy at the standard conditions, namely, at a temperature of 15°C and at an absolute pressure of 101.325 kPa; and

(b) in the case of thermal measurement, shall be computed as the number of joules on a dry basis, where dry gas has a moisture content of less than 110 mg/m3.

(2) Where volume is measured under conditions of temperature and pressure other than the standard conditions described in paragraph (1)(*a*), the volume shall be converted to the equivalent under the standard conditions, in accordance with the Ideal Gas Laws, and shall be corrected for deviations from the Ideal Gas Laws in accordance with subsection (3), where the amount of the deviation exceeds one per cent.

(3) Correction for deviation from the Ideal Gas Laws shall be based on the table published in the American Gas Association (AGA) Report No. 3, *Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids*, as amended from time to time.

(4) Notwithstanding subsections (1) to (3), propane, butanes and ethane may be measured in liquid form, in which case the volume measurement shall be computed in cubic metres.