

National Energy
Board



Office national
de l'énergie

LETTER DECISION

File OF-EI-Gas-GL-Q027-2014-01 01
30 June 2015

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Dear Mr. Denstedt and Mr. Mudryk:

**Quicksilver Resources Canada Inc.
29 July 2014 Application for a Licence to Export Liquefied Natural Gas
National Energy Board Reasons for Decision**

On 29 July 2014 Quicksilver Resources Canada Inc. (Quicksilver) applied to the National Energy Board (NEB or the Board) pursuant to section 117 of the *National Energy Board Act* (NEB Act) for a licence (Licence) to export liquefied natural gas (Application). Quicksilver seeks a Licence duration of 25 years, starting on the date of first export, with an annual volume of 20 million tonnes, which corresponds to a natural gas equivalent of 960 billion cubic feet (Bcf) or 27 billion cubic metres (10^9 m^3) annually¹, and a maximum quantity of 25,875 Bcf or $733 \cdot 10^9 \text{ m}^3$ over the term of the Licence.²

The export point proposed is located on the north side of Campbell River, British Columbia, at the outlet of the loading arm of a proposed natural gas liquefaction terminal.

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¹ Applied-for annual quantity not including tolerance. Maximum annual quantity including 15% tolerance is 1,104 Bcf or $31.3 \cdot 10^9 \text{ m}^3$.

² Applied-for term quantity including 15% tolerance.

Board Decision

We have decided to issue a Licence to Quicksilver, subject to the approval of the Governor in Council, to export natural gas with the terms and conditions described in Appendix I to this letter decision. Our role, under section 118 of the NEB Act, is to assess whether the liquefied natural gas (LNG) proposed 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 trends in the discovery of gas in Canada (Surplus Criterion).

In fulfilling this mandate, we recognize that Canadian natural gas requirements are met in the context of free trade within a North American energy market. Depending on regional characteristics, exports and imports contribute to either gas supply or gas demand. It is in this context that we consider whether the Surplus Criterion in the NEB Act is satisfied.

We have determined that the quantity of gas proposed to be exported by Quicksilver is surplus to Canadian needs. The Board is satisfied that the gas resource base in Canada, as well as North America overall, is large and can accommodate reasonably foreseeable Canadian demand, the natural gas exports proposed in this Application, and a plausible potential increase in demand.

The Board acknowledges that, in aggregate, the LNG export licence applications submitted to the Board to date represent a significant volume of LNG exports from Canada. However, all of these LNG ventures are competing for a limited global market and face numerous development and construction challenges. Consistent with the evidence submitted in Quicksilver's Application, the Board believes that not all LNG export licences issued by the Board will be used or used to their full allowance. The Board also evaluates each application based on its own merit.

The Board monitors Canada's natural gas supply and demand, including LNG developments. 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 future energy requirements. The North American gas market is characterized by a large number of buyers and sellers, an extensive and growing pipeline and storage network, and a sophisticated commercial structure. Since deregulation of Canadian gas markets in 1985, gas markets in North America have functioned efficiently and there is no evidence to suggest that they will not continue to do so in the future.

Natural Gas Export Regulation

The Board's regulation of natural gas exports is governed by a statutory framework that includes the following three components:

- that all natural gas exports must be authorized by an order or licence³;

³ Section 116 of the NEB Act.

- that the Board must satisfy itself that the gas to be exported by licence is surplus to Canadian requirements⁴; and
- that all exports must be reported⁵.

A mandatory hearing for gas export licences is no longer required by the NEB Act. For this Application, the Board decided to utilize a written process involving a Notice of Application by the applicant and a Comment Period for impacted persons.

Summary of the Public Notice, Comment Period and Information Requests

On 15 October 2014, Quicksilver published a Notice of Application and Comment Period (Notice) for impacted persons in both the *Globe and Mail* and *La Presse*. Quicksilver also confirmed they served the Notice on specified persons and agencies on 3 October 2014. The Notice requested that any impacted person who wished to file submissions on the merits of the Application do so by 14 November 2014. The Board received no submissions.

The Board issued two Information Requests (IRs) to Quicksilver, on 22 January 2015 and 4 May 2015. Quicksilver filed its responses on 4 February 2015 and 15 May 2015, respectively.

Surplus Determination

Quicksilver submitted that, as required by the Surplus Criterion, the quantity of gas it seeks to export does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada. In support of this submission, Quicksilver submitted the following studies: (1) *Long Term Natural Gas Supply and Demand Forecast to 2050* prepared by Ziff Energy – A Division of HSB Solomon Associates Canada Ltd. (Ziff); (2) *A description of the implications on the ability of Canadians to meet their natural gas requirements and an assessment of whether this gas is surplus to reasonably foreseeable Canadian requirements* prepared by Mr. Roland Priddle (Mr. Priddle); and (3) *Canadian LNG Exports and Global LNG Outlook* prepared by Poten & Partners (Poten).

Ziff submitted that the North American and Western Canadian gas resource bases are robust and continue to grow with the development of horizontal drilling and multi-stage fracture technologies. Ziff noted that these developments have led to an abundance of low-cost natural gas available in North American and Canadian tight and shale gas plays. Ziff expects natural gas markets in North America to continue to function in a rational manner during the forecast period and to provide appropriate market signals for the development of resources to meet Canadian domestic and export demand.

Ziff and Mr. Priddle submitted that the North American gas market is highly liquid, open, and efficient. Ziff and Mr. Priddle concluded that the export of gas proposed by the Applicant will not cause Canadians any difficulty in meeting their natural gas requirements.

⁴ Section 118 of the NEB Act.

⁵ Section 4 of the *National Energy Board Export and Import Reporting Regulations*.

Mr. Priddle also observed that the marketplace will generally operate in such a way that Canadian requirements for natural gas will be met. This premise has been confirmed through the experience of the last 27 years with the market functioning stronger over time. Mr. Priddle concluded that the exports proposed by Quicksilver will not significantly affect the ability of Canadians to meet their gas requirements as these requirements will be met from Canadian, American and possibly overseas import sources.

Ziff also provided a Canadian demand sensitivity analysis (additional Canadian demand), which concluded that additional demand would be met by a combination of increased Canadian natural gas production and increased imports from the Lower-48 states, within a well-functioning North American market.

When considering the level of LNG exports from Canada, Ziff included nearly all NEB approved exports to a maximum of 18 Bcf/d in its analysis. Ziff considered the approach as a stress test for the Canadian natural gas market but also stated that it did not consider the current level of NEB-approved LNG export volumes to be likely. Ziff noted that economics and market differentials will ultimately determine if increased liquefaction investment is warranted.

Poten noted that currently proposed LNG export ventures in Canada total 333.6 million metric tonnes per year (MMt/y), of which 295.1 MMt/y are located in Western Canada and 38.5 MMt/y are located in Eastern Canada. Poten provided low and high case projections for Canadian LNG exports. In its low case projection for LNG exports, Poten forecasts one two-train venture proceeds and peaks at 10 MMt/y. In the high case projection, it forecasts several Canadian ventures proceed and peak at 77 MMt/y. Poten states that it is confident that the likely range of exports is far closer to the low end than the high end.

Poten noted that LNG ventures are challenging to develop, face many hurdles, and are prone to delay. Complex factors facing LNG ventures include difficult resource locations and feedgas compositions, remote plant sites with challenging logistics, heterodox stakeholders, environmental and regulatory requirements, financing constraints and proliferating contracts to align both in timing and content. Poten stated that Canadian labour rates and productivities have significant impacts on pipeline and plant costs, and are the most uncertain variables for estimating construction costs on the Canadian West Coast.

Poten believes that LNG exports from Canadian ventures will not start until 2020 at the earliest. Poten noted that part of the relative lack of progress in Western Canadian LNG ventures can be explained by the fact that large buyers have not stepped up to provide the foundation commitment and robust price support that new LNG supply regions require to get off the ground. Poten emphasized that there are many LNG ventures worldwide, competing for robust, but not unlimited, global LNG demand.

Views of the Board

The Board is satisfied that the gas resource base in Canada, and the overall North American gas resource base, is large and can accommodate reasonably foreseeable Canadian demand, including the LNG exports proposed by the Applicant, and a plausible potential increase in demand. The Board agrees with Ziff and Mr. Priddle that the North American gas market is highly liquid, open, efficient, integrated, and responsive to changes in supply and demand. The Board further accepts the Applicant's analysis of Canadian demand and, given the size of Canadian natural gas resources and the integrated and well-functioning nature of the North American gas market, concludes that Canadian gas requirements will be met.

The Board notes that the evidence in this Application is generally consistent with the Board's own market monitoring information. Recent studies of natural gas resources indicate that advances in drilling and hydraulic fracturing have resulted in greatly increased estimates of recoverable resources in the Western Canada Sedimentary Basin and in the United States. Furthermore, since deregulation of Canadian gas markets in 1985, gas markets in North America have functioned efficiently and there is no evidence to suggest that they will not continue to do so in the future.

In aggregate, the LNG export licence applications submitted to the Board to date represent a significant volume of LNG exports from Canada. All of these LNG ventures are faced with a robust, but limited, global market and face numerous development and construction challenges. Factors such as the size, remoteness, complexity, lack of large buyers coming forward, and the Canadian cost structure are among the issues that Canadian LNG ventures are facing.

Consistent with the Poten evidence, the Board believes that not all LNG export licences issued by the Board will be used or used to the full allowance. Poten provides both low and high case projections for the likely level of LNG exports from Canada, with both being well below the aggregated total of proposed LNG export ventures in Canada, including Board approved export licences, to date. Poten states it is confident that actual export volumes will be closer to its low projection case. It is the view of the Board that there are sufficient resources to meet Canadian demand plus the forecasted level of LNG exports in either of Poten's low or high case projections. In addition, the Board will not predict which licences will be used or used to the full allowance.

The Board evaluates each application on its own merit. In this case, based on all of the foregoing, the Board is satisfied that the quantity of gas, proposed to be exported by Quicksilver 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.

Relief Requested

Relief from Filing Requirements

Quicksilver requests relief from the information requirements for gas export licence applications set out in section 12 of the *National Energy Board Act Part VI (Oil and Gas) Regulations* (Oil and Gas Regulations), except where those requirements are addressed elsewhere in its Application.

Views of the Board

The Board notes that it may exempt applicants for gas export licences from the filing requirements contained in section 12 of the Oil and Gas Regulations. In its *Interim Memorandum of Guidance Concerning Oil and Gas Export Applications and Gas Import Applications under Part VI of the NEB Act*, dated 11 July 2012, the Board indicated that it no longer requires applicants for gas export licences to file the information contained in section 12(f). The Board further recognizes that not all of the other filing requirements contained in section 12 of the Oil and Gas Regulations are relevant to its assessment of this Application. Therefore, the Board exempts Quicksilver from the filing requirements contained in section 12 of the Oil and Gas Regulations that were not included in the Application.

Additional Licence Terms and Conditions

Quicksilver requested a 15 per cent annual tolerance to the amount of gas that may be exported under the Licence in any 12-month period.

Quicksilver also requested a sunset clause where, unless otherwise authorized by the Board, the Licence will expire ten years from the date of issuance of the Licence if exports have not commenced on or before that date.

Quicksilver further requested that the point of export of LNG from Canada will be at the outlet of the loading arm of a proposed natural gas liquefaction terminal located on the north side of Campbell River, British Columbia.

Views of the Board

The Board accepts Quicksilver's request for a 15 per cent annual tolerance. The maximum term quantity permitted under the Licence is inclusive of the annual tolerance amount.

The Board accepts Quicksilver's request for a ten year sunset clause, from the date of Governor-in-Council approval of issuance of the Licence, as reasonable. When issuing a gas export licence it has generally been Board practice to set an initial period during which, if the export of gas commences, the licence becomes effective for the full term approved by the Board. This condition in the licence is referred to as a sunset clause because the licence would expire if the export did not commence within the specified timeframe.

The Board accepts Quicksilver's request that the point of export of LNG from Canada be at the outlet of the loading arm of a proposed natural gas liquefaction terminal located on the north side of Campbell River, British Columbia.



R.R. George
Presiding Member



P.H. Davies
Member



S. Parrish
Member

Appendix I

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

General

1. Quicksilver 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 liquefaction terminal referred to in Quicksilver's application dated 29 July 2014, which is to be located on the north side of Campbell River, British Columbia, Canada (the Liquefaction Terminal), and shall continue for a period of 25 years thereafter.
3. This Licence shall expire 10 years from the date of Governor-in-Council approval of its issuance, unless exports from the Liquefaction Terminal have commenced on or before that date, or the Board otherwise directs.
4. The maximum quantity of natural gas, inclusive of tolerance, that can be exported by Quicksilver under the authority of this licence is:
 - a. $31.3 \times 10^9 \text{ m}^3$ in any 12-month period; and
 - b. $733 \times 10^9 \text{ m}^3$ for the term.
5. Natural gas will be exported at a point at the outlet of the loading arm of the Liquefaction Terminal.