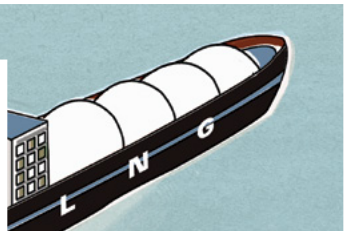


# Developments in Canada's Burgeoning LNG Export Industry

*by Janice Buckingham & Paula Olexiuk*

What a difference a year can make. If the narrowing window of opportunity for capturing the Asian liquefied natural gas (LNG) export market means Canada's west coast LNG projects have "come late to the party",[1] project proponents are working around the clock to catch up and secure what is anticipated to be a lucrative and highly sought after share of the Asian LNG export market.

The proposed western Canadian LNG export industry has doubled in 2013, in both the number of projects and volume of gas sought for export. In 2012, there were five projects proposed for export from B.C., targeting aggregate volumes for export of 77.08 mtpa and by the end of 2013, another four projects sited in B.C. sought export licences for an additional 58.4 mtpa, bringing the aggregate volume of LNG proposed for export from B.C. to 135.48 mtpa. Export licences have been granted by the National Energy Board (NEB) for seven of the nine projects or 109.18 mtpa.[2]

Two other projects have also sought export licences from the NEB for a further 19 mtpa: one sourcing imported U.S. gas to be liquefied and exported from Goldboro, Nova Scotia, and the other sourcing gas from the western Canadian sedimentary basin for export to the U.S. and further liquefaction and export from Coos Bay, Oregon.

Can the size of B.C.'s vast shale gas supply match the intended markets demand for additional energy in targeted markets? There is little doubt that it could, if that were only the question. LNG exports from the west coast are competing primarily for markets in China, Korea and Japan while exports

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**Talisman Energy Inc.** *in its agreement to sell part of its Montney Shale gas position in NE B.C. to Progress Energy Canada Ltd. for $1.5 billion*

**Apache Canada Ltd.** *and* **Chevron Canada Corp.** *in various aspects of Kitimat LNG projects*

1 Pawel Mirski and Len Coad, "Managing Expectations, Assessing the Potential of B.C.'s Liquid Natural Gas Industry", Canada West Foundation, October 2013, p. 1.

2 See the table at the end of this article identifying the planned projects that have sought NEB export licences.

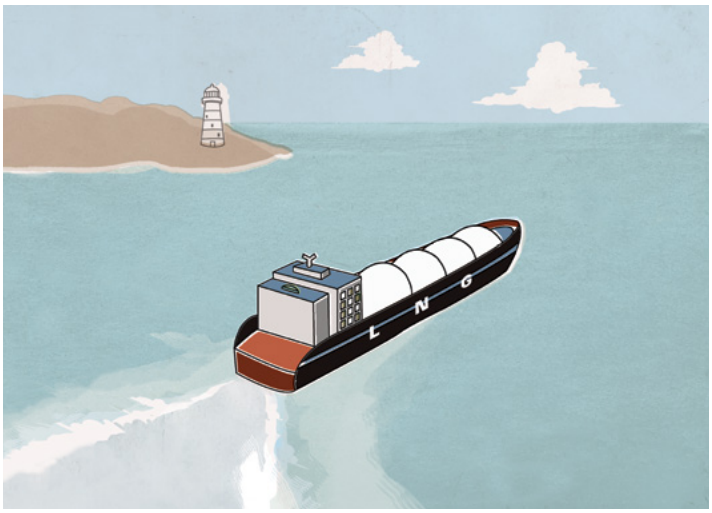
from the east coast are destined for delivery to the western European market. China is said to be planning to add five LNG receiving terminals by 2015, doubling its total capacity to 35-40 mtpa. Japan, as one of the world's largest importers of LNG, is still striving to replace the loss of its nuclear power and needs to secure long-term contracts from a stable energy supply source at competitive prices.

However, there is reason to exercise caution when anticipating demand:

> Between 2013 and 2025, Asian natural gas demand is projected to increase by 216 billion cubic metres per year. Traditional LNG suppliers to Asia currently have 96.9 bcm/year of capacity under construction, 90.1 bcm/year of capacity that has completed front-end engineering and design (FEED),and 81.9 bcm/year of capacity that has been announced. If all of this proceeds, it adds up to 268.9 bcm/year – 52.9 bcm/year more than anticipated market growth in Asia.[3]

These are sobering statistics for an industry still undergoing FEED, yet determined to supply such market.

The staggering growth in both LNG demand and proposed export capacity from Canada has occurred despite significant competitive pressure on multiple fronts, and that pressure is mounting for those in the race to be the first to declare final investment decision (FID). 2014 looms prominently as the year in which such decisions may be made by proponents of the more advanced projects. Decisions to proceed must take into account a number of key considerations: (i) significant global market pressures to secure the available projected Asian market growth; (ii) the B.C. government's political expectations for a $100 billion industry; (iii) growing environmental activism in the province against regulators and companies; (iv) a complex and multi-faceted provincial and federal regulatory regime governing approval and construction of such projects; (v) long-term price negotiations aimed at links to U.S. Henry Hub pricing rather than international crude oil prices; (vi) extensive consultations with First Nations to address potentially adverse impacts to traditional lands caused by such projects; (vii) competition for skilled labour; and (viii) an as yet uncertain export tax regime.




Based on lessons learned from mega-project development in other Canadian industries such as the oil sands and from LNG project development in other jurisdictions such as Australia, balancing schedule demands and goals against budgetary constraints will be of critical importance for the

3 *Supra*, note 1.

successful development of LNG projects in Canada. As some projects move beyond feasibility analysis into the detailed engineering and design and construction phases of development, competition for the skilled labour and resources needed for these mega-projects and the corresponding development of the natural gas reserves and pipelines and supporting infrastructure to feed such projects is also intensifying. Concerns and risks around labour and resource shortages and resulting schedule delays, cost escalation and overruns are being magnified by growing competition locally, in the U.S. and internationally in the LNG industry.

Given the relative infancy of the LNG industry in Canada, Canadian project proponents must seek out and compete for LNG expertise across the globe, while at the same time meeting local and First Nations content and employment targets and commitments that apply to their projects. Managing costs and schedules, while also meeting such commitments and addressing the challenges of constructing in remote locations with limited infrastructure and power supply, are key challenges for Canadian developers as these projects progress from the conceptual stage toward commercial reality.

Securing transportation routes and rights to connect reserves to facilities was also a focal point in 2013. TransCanada Corp. was selected by both Pacific NorthWest LNG to build the Prince Rupert Gas Transmission Project (an extension of the NGTL system) carrying natural gas to Lelu Island, and by Shell to build the Coastal Gas Link carrying natural gas to Kitimat.

LNG fuelling stations even became part of the country's proposed LNG story when ENN Canada Corp., a subsidiary of a large natural gas distributor in China, and Ferus Natural Gas Fuels announced a joint venture to build plants and fuelling stations around such plants.

Powering the plethora of LNG facilities remains an issue which the provincial hydro authority has not yet fully resolved. BC Hydro's long-term plan released November 26, 2013 offers 3,000 gigawatt hours of power for the entire LNG sector when a single plant can require 7,000 gigawatt hours to process natural gas into LNG.[4] Gas turbine drives appear to be many proponents' preferred power option given their widespread global use and success in operating LNG projects.

Announcement of the long awaited B.C. government's LNG export tax originally scheduled for November 2013, then by the end of December, has now been postponed to February 2014. There is little doubt that the uncertainty over such fiscal terms has negatively impacted the timing of proponents' final investment decisions. When coupled with the difficulty in securing long-term oil-indexed pricing, the competing brownfield projects from the U.S. west coast which are prepared to accept a more North American approach to pricing have an advantage.

4 N. Vanderklippe, J. Hunter, "LNG claim contradicted; Premier promotes clean liquefied natural gas, but production could boost greenhouse gas emissions", November 28, 2013, *The Globe and Mail*.

Market pressures increased again toward the end of 2013 as Japan and India jointly announced that oil-linked prices for LNG do not accurately reflect the LNG supply and demand balance in Asia-Pacific markets, and so they have agreed to form a buyers' group for LNG designed to reduce the Asian premium. Japanese utilities affected by the Fukushima incident are being "encouraged to negotiate LNG prices to be equal to or lower than the previous deal before they can pass on higher fuel costs to their power consumers."[5] The LNG contracts entered into by Japan in the 1970s and 1980s are also expiring, and faced with renegotiating term contracts or locating shorter-term supply, some Japanese firms are acquiring equity stakes in shale gas exploration projects linked to export facilities in order to guarantee future supply. Japan Oil, Gas and Metals National Corporation (JOGMEC) also announced that it will guarantee 75% of the bank loans to Japanese companies involved in developing LNG projects that help reduce Japan's import fuel cost.[6]

As the Canadian industry ramps up for FID, proponents also cannot ignore the increasing importance placed on having a social licence to operate large scale projects in addition to the requisite regulatory approvals. Companies succeeding on this front are getting out ahead of the issues, increasing local visibility in the communities impacted by such projects, and improving energy literacy in general. However, such actions do not guarantee immunity for the industry or the regulators, as the BC Oil and Gas Commission (BC OGC) witnessed recently. A coalition of environmental groups took the BC OGC to court in mid November 2013 allegedly for allowing oil and gas companies to withdraw large quantities of water for fracking operations under repeated short-term water permits, claiming a violation of the provincial water act.

Given the timing advantage that Australian projects have in being much closer to completion than the B.C. projects, the pricing formula that certain U.S. projects (Sabine Pass) are prepared to accept (which the B.C. projects cannot afford to accept), the tremendous cost to develop shale gas reserves and construct new pipelines to bring the gas to tidewater and liquefy it for export, the uncertainty created by the B.C. government's delayed export tax announcement, plus the growing alternatives that China has to expand its sources of natural gas supply (domestically and via increased pipeline capacity), Canada's LNG export industry requires the strength of its proponents' convictions as well as their global expertise.

As to what 2014 might bring, industry watchdogs are writing cautionary reports reminding industry, the B.C. government and the public that swift action is needed to secure Canada's competitive advantage, without losing sight of the risks facing the industry.[7] Canada can, and should, be a global player on the LNG stage. Whether it achieves that through a few or numerous projects remains to be seen, however. What is becoming clearer is that consolidation is likely to occur at some level especially if shortages of labour and resources affecting completion of these projects develop as proponents fear.

5 PFC Energy, "Japan Energy Profile: World's Largest Liquefied Natural Gas Importer – Analysis", 30 October 2013.

6 Ibid.

7 *Supra*, note 1.

## Proposed Natural Gas Liquefaction Export Projects

| Planned B.C. Export Terminal Proponents (Participants) | Status of NEB Export Licence | Liquefaction Capacity (MTPA) |
|---|---|---|
| BC LNG Export Co-operative LLC<br>(Douglas Channel Energy Partnership, (Golar, Haisla, LNG Partners) | 20 yr licence approved | 1.8 |
| Kitimat LNG<br>(Apache,Chevron) | 20 yr licence approved | 10.0 |
| Pacific Northwest LNG<br>(PETRONAS, Japex; PetroleumBRUNEI) | 25 yr licence approved | 19.68 |
| LNG Canada Development Inc.<br>(Shell, CNPC, Kogas, Mitsubishi) | 25 yr licence approved | 24 |
| WCC LNG Ltd.<br>(Imperial /ExxonMobil) | 25 yr licence approved | 30 |
| Prince Rupert LNG Exports Limited<br>(BG/Spectra) | 25 yr licence approved | 21.6 |
| Woodfibre LNG Export Pte. Ltd. | 25 yr licence approved | 2.1 |
| Triton LNG Limited Partnership<br>(Altagas/Idemitsu) | 25 yr application under review | 2.3 |
| Aurora Liquefied Natural Gas Ltd.<br>(CNOOC/Nexen, Inpex and JGC) | 25 yr application under review | 24 |
| **Sub Total** | | **135.48** |
| **Other Planned LNG Exports** | | |
| Veresen – Jordan Cove (export to U.S. for further export from Coos Bay, Oregon) | 25 yr application under review | 9 |
| Pieridae Energy Ltd. (Goldboro LNG Limited Partnership) (export from Nova Scotia) | 20 yr application under review | 10 |

**CONTRIBUTORS**

Janice Buckingham
*Partner, Corporate*
*jbuckingham@osler.com*
*403.260.7006*

Paula Olexiuk
*Partner, Corporate*
*polexiuk@osler.com*
*403.260.7080*