



Maritime energy transport Today and tomorrow in the Pacific Northwest Gateway

By RAdm Nigel Greenwood, RCN (Ret'd), Vice-Chair
Nautical Institute BC Branch

>>> Each of the three streams being considered — coal, oil and LNG — requires dedicated and special expertise to address every issue from initial concept and through to a (hopefully) lengthy record of safe and profitable trade.

There are many ways to describe B.C. The coast is variously “west”, “wet” or “left”, referring to supposed geographic, climatological and political leanings, none of these being a good consistent descriptor of the province as a whole.

A further impression of B.C. is as a “Gateway” to the Pacific world. What was true in the 19th/early 20th centuries with Canadian Pacific “Empress” ships and Trans-Pacific cable connections is still true today with a majority of Canada’s maritime trade flowing through B.C. ports, and our immigration being substantially fed from Asian points of origin.

Recently, however, the term “Gateway” has been linked more particularly to the promise of great benefits for B.C. through the shipment of energy commodities from our shores. This expectation provides an imminently debatable set of topics for the NIBC’s upcoming conference in May.

Fish...or cut bait?

For many proponents of the energy trade through BC ports, it is a matter of matching supply to demand. The abundant availability of Alberta oil, and

Alberta/B.C. gas seeks a route to market which is not limited by pipeline distance or neighbourly opposition. The corresponding demand continues to grow in Asia as populations and economies expand and modernize. China’s gradual weaning from coal-fired electricity threatens the coal trade, while steel production still calls for prodigious quantities of this commodity.

B.C.’s market opportunity, however, is not a sure thing. Energy interests in South-east Asian and Australia are competing to be first to this growing market, with some industry analysts suggesting that the LNG market particularly could soon become saturated.

The massive investment required to initiate shipments requires the careful co-ordination of many related interests in a firmly connected stream from well-head to end-user. Solid business relations and tight contracts have to be negotiated

against a background of volatile profit margins. The myriad private, corporate and governmental calculations take place in limited forums, while the public debate is stretched thin between the poles of economic benefit (tax revenues, jobs, economic stimulation) and risks (largely environmental and social/human).

The deliberate, sometimes apparently glacial, progress of the export licensing, environmental assessment and approval, engineering design and public consultation process seems to belie any haste in this endeavour. Yet there are those who insist that this is a fleeting opportunity and the window of opportunity will soon close: for them it is time to “fish or cut bait.”

But is this really correct? Or, even if the market is forgiving of prudent delays, will it support the number of proponents who are lining up to ship LNG from B.C.? And what do developments in the established

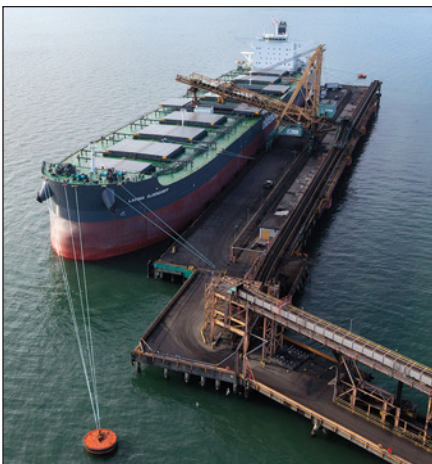


Photo: Dave Roels (www.daveroels.com)



Photo courtesy Pacific Northwest LNG



Photo courtesy Kinder Morgan Canada

Coal, LNG, and oil transport — the NIBC Conference provides an excellent opportunity for education, discussion and networking.

ENERGY TRANSPORT

industries of coal and oil exports mean as these activities are diversified in B.C.'s coastal areas? These will be key questions for the NIBC's opening conference panels.

Great expectations...real challenges

The transport of energy by sea, however, is not all about great expectations. There are real technical and operational challenges to be confronted and overcome. Each of the three streams being considered — coal, oil and LNG — requires dedicated and special expertise to address every issue from initial concept and through to a (hopefully) lengthy record of safe and profitable trade.

A number of innovations will be called for, both in established trades and new streams. Plans to trans-ship coal through Texada Island seek to avoid the bottlenecks of Vancouver Harbour and utilize available Fraser River waterfront. Efforts of Kinder Morgan to twin their Trans-Mountain pipeline require not only imaginative engineering solutions on land but also advanced tug escort techniques to maximize the loads of ships transiting the Second Narrows. Similar approaches may be needed in Douglas Channel for potential oil shipments out of Kitimat.

And the variety of LNG proposals for the coast demonstrates the full range of possible solutions, from large multi-train shore-side terminals to floating LNG re-liquefaction plants of various sizes. In the former case, some shore-side terminals will call for advanced ocean engineering techniques, both to land large pre-fabricated modules on green-field sites, and also to situate ship berths for minimum disturbance of sensitive environmental areas. In the latter, proponents seek to leverage a higher level of foreign construction and assembly to achieve shorter decision-to-operation timelines.



Marine Fire and Safety Training and Consulting

- Safety and risk management
- Safety audits
- Offering courses in Marina and Small Craft Harbours Fire Fighting; Confined Spaces Entry and Rescue; Waterfront Hazmat; Initial Emergency Response to Incidents for Terminal and Port Operators; Spill Response; and Basic Fire Fighting

SeaFire Training Ltd

John F. Lewis, FNI CRSP

Tel: 604 951 0061

Cel: 604 318 0985

Email: seafire@shaw.ca



www.seafire.org

The increases in the numbers, types and sizes of ships on the B.C. coast has implications for many aspects of the marine services sector in B.C. There will be increased requirements for marine pilots and for escort tugs. More ship agents and chandlers could be required to meet the enlarged volume of shipping. And technical services from surveyors to naval architects and ship-repair services will likely respond to increased demands. In this way the old adage, "a rising tide lifts all ships" represents the collective expectation of the marine industry. The NIBC conference will explore some of these ideas also.

Opposition and response

It would be a mistake, however, to believe that all such lauded progress is universally welcomed. The history of energy transport by sea is full of too many awful examples to take the risks lightly. Accordingly, there are many initiatives underway to acknowledge concerns, and to recognize and mitigate the identifiable hazards.

Efforts to mitigate navigational risks include initiatives of the Pacific Pilotage Authority to identify means and locations for more assured and distant pilot boarding, particularly for energy ships. The techniques of tethered tug escort continue to be refined, and potentially extended to additional routes/areas.

Increased traffic will require augmented marine traffic advisory services in some locations, possibly including separation schemes for de-confliction of arriving and departing traffic. And larger ships on new routes may potentially require enhanced hydrographic surveys and augmented navigational aids.

Of course, shipping is in no way a "zero-risk" enterprise. Prudent risk management therefore will have to include measures both to prevent the occurrence of accidents as well as to mitigate the consequences, so that the net risk is as low as reasonably achievable. The mandated Environmental Assessments and TERMPOL studies required of the oil and gas proponents drive much of this effort. Transport Canada's "world-class tanker safety" program will contribute to this by requiring the highest standards of ship maintenance and operation, with matching excellence in navigational aids, and enhanced spill response in coastal waters.

Will there remain some who insist that no resultant risk is low enough for the preservation of B.C.'s coastal beauty and the livelihoods of those dependent on oceanic living resources? Undoubtedly. But, at least within the limitations of a two-day conference, NIBC hopes to give a fair and balanced airing of the range of issues, concerns and responses raised by the topic of maritime energy transport in B.C. waters.

Invitation to discussion

The BC Branch of the Nautical Institute hopes to address the theme of maritime energy transport with a conference that is both informative and open to debate, welcoming all seafarers, shipping executives and agents, engineers, naval architects, economic planners, members of nautical professional societies, and also interested members of the public. NIBC will thus fulfill its mandate to work for improvement of the marine industry through stimulation of engaged professional debate, and mentorship of young people seeking to enter the profession of the sea.

The NIBC 2015 Conference takes place in Victoria, BC, 7-8 May. The conference website is www.nibconference2015.com

RAdm Nigel Greenwood, RCN (Ret'd) is a Master Mariner, Fellow of the Nautical Institute and Vice-Chair of the NIBC. He consults in maritime risk and operational assessments, and general security matters, under the banner Greenwood Maritime Solutions Ltd.