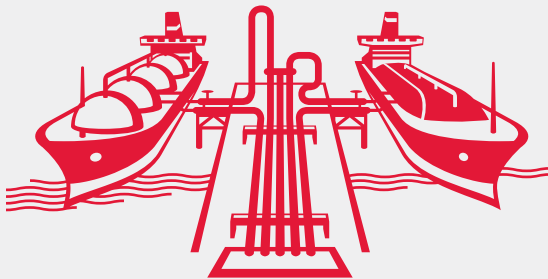


Canadian LNG from a Global Perspective

By [Michael Laffin](#) and [Paul Blyschak](#)



The next several months are set to be an important period for Canada's nascent liquefied natural gas (LNG) industry. After nearly half a decade of project announcements, commercial development, increasing press coverage and often intense political debate, it is expected that the remainder of 2016 could see one or more of the country's first affirmative LNG final investment decisions.

The stakes are considerable. In the event a significant amount of liquefaction capacity is approved, Canada could become an important player on the global LNG stage. By contrast, should the industry stall, it could be a decade or more before the next meaningful LNG development "window" opens for the country.

On what basis then, are such final investment decisions being made — in what context and according to what considerations? Or perhaps more poignantly, how does Canada's LNG industry compare with its international counterparts; which final investment decision considerations are applicable to the LNG industry in general and which may be considered more endemic to Canada?

This article will address these questions at a high level with a view to casting light on Canadian LNG from a global perspective. As a first step to considering Canada's budding LNG industry, it is helpful to note that while the LNG industry is global in scope, different international jurisdictions have witnessed the development of varied formulations of LNG projects and LNG value chains. Canada presents a number of characteristics somewhat unique on the global LNG stage, some of which may, on the one hand, be unfamiliar to LNG participants without direct Canadian oil and gas experience or, on the other hand, be overlooked by Canadian oil and gas players without significant exposure to overseas LNG projects.

We therefore offer a snapshot of Canadian LNG from three primary sightlines. First, we consider the distinct junction that Canadian LNG projects would occupy within wider international LNG trade patterns. Second, we examine a number of the hallmarks of the LNG value chain in Canada. Third, we compare the different LNG project structures or "economic models" being employed in Canadian LNG projects to those commonly adopted by the wider LNG industry.

For a deeper discussion of these issues, please see our publication in the *Journal of World Energy Law & Business*, "[LNG in Canada: value chain, project structure and risk allocation](#)."

1. CANADIAN LNG PROJECTS AMID INTERNATIONAL LNG TRADE



It is in many ways a trite observation to state that LNG trade is fundamentally international in scope. Producing nations export, consumer nations import, and comparatively little LNG trade currently occurs within domestic

borders. However, the particular geographic situation of an LNG-exporting jurisdiction is of great consequence on a number of fronts.

First, due to the significance of maritime transportation costs, geography will do much to dictate the availability of different downstream markets and therefore project viability. Generally speaking, proximity to buyers lowers costs, reduces a number of project risks, increases the number of potential secondary markets, and facilitates arbitrage and profit maximization.

Second, not all importing markets are created equal. Significant variations exist among the nature of importers (e.g., private versus state-owned), local energy infrastructure and supply characteristics, and national energy policy and prerogatives, among others.

Third, LNG offtake arrangements can have far-reaching ramifications on the LNG value chain upstream of consumption, including natural gas production, pipeline transportation and liquefaction. Indeed — although it is natural to approach the LNG value chain chronologically beginning with the upstream production of natural gas — the opposite approach is sometimes more appropriate.

With these factors in mind, Canada would occupy an interesting place on the international LNG stage. In particular, unlike in most other LNG export jurisdictions, Canadian LNG export projects, depending on their location (e.g., whether located on the west or east coasts), will have access to either the Pacific or Atlantic basins. This is significant given that these two basins feature a number

of different characteristics, including:

1. Current LNG export capacity and export capacity under construction
2. LNG consumption patterns and demand projections going forward
3. The number, size and diversity of LNG export and import markets
4. The scope of regional natural gas markets and applicable competition, deregulation and liberalization policies impacting LNG importers
5. The scope of regional natural gas production, processing and transportation infrastructure available to LNG importers
6. The dependency of LNG importers on foreign natural gas and the availability of competing local energy sources

Among other things, these variations have consequences on a number of important LNG sale and purchase agreement provisions, including common pricing regimes, price review practices, and approaches to destination restrictions and destination flexibility. So too are they likely to impact wider project development considerations, including risk allocation and mitigation along the LNG value chain, as well as preferable project structure models from an LNG buyer's perspective.

2. LNG VALUE CHAINS IN CANADA

Canada is posed to join the LNG industry at a dynamic point. Today's LNG industry is much more complex than at its inception, and this evolution looks to continue. Among other things, the last several decades have witnessed increasingly diversified involvement across multiple links of the LNG value chain by a greater number and diversity of participants, including participants previously only involved in a single component of the chain. Other developments include the progress of small-scale and floating LNG

liquefaction, regasification and storage technologies, the emergence of LNG aggregators and portfolio traders, and increased trading of LNG on a spot basis and under shorter-term LNG offtake agreements.

The result is a global LNG industry composed of a multitude of projects presenting a wide variety of different combinations of upstream producers, pipeline companies, liquefaction facility owners and operators, maritime transportation companies, downstream consumers, and state-owned entities and other sovereign interests, each with their own sets of objectives and drivers.

Canada would also constitute an interesting addition to this mosaic, representing a mixture of potential value chain participants and conditions that is somewhat uncommon when viewed from a global perspective.

Unlike many of its global counterparts, Canada would enter the LNG export market with the benefit of a mature and robust continental natural gas industry with extensive existing regional natural gas transportation and processing infrastructure. The Canadian natural gas sector is also composed of a full spectrum of market players — from locally headquartered junior producers through to the Canadian subsidiaries of vertically integrated international oil and gas majors.

In contrast to a number of other LNG-producing jurisdictions, Canadian-integrated LNG projects are not based on a single or small number of large new dedicated exploration and production concessions. Rather, the Canadian natural gas industry is characterized by the development of a large number of leases often subject to joint development by multiple parties and in respect of which dedication to an LNG project (whether integrated or otherwise) may be only one of a number of possible monetization strategies.

Given the often significant distances separating Canada's natural gas production areas and its coastlines, the development of necessary additional pipeline infrastructure has been a critical component of many of

the largest proposed Canadian LNG projects. However, this challenge has been mitigated by the presence of a number of large and sophisticated pipeline companies with long-standing regional operations, resources and experience. These challenges have also resulted in a number of creative approaches to project development arrangements and cost sharing. The existence of regional pipeline networks, market hubs, price indices and related hedging instruments also provides many Canadian LNG projects with various natural gas sourcing and risk mitigation strategies often absent in other LNG export jurisdictions.



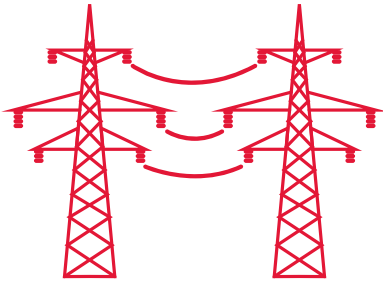
Canadian LNG is somewhat distinctive at the regulatory level. The Canadian government, unlike certain other LNG exporting nations, does not require or seek direct involvement in LNG projects — whether through equity participation or otherwise — and is instead content to limit its involvement to that regulator. Also, the Canadian government does not prohibit foreign ownership of upstream oil and gas production rights, as is the case in some other exporting jurisdictions.

LNG export permits in Canada are issued only where federal regulators are satisfied that surplus natural gas will remain to ensure that Canadian consumption requirements will be met; a legacy of Canada's history of natural gas exports to the United States.

Proponents of Canadian LNG projects must also be mindful of the constitutional rights of Canada's Aboriginal Peoples, including their entitlement to consultation (and potentially accommodation) where a resource project may impact their aboriginal rights.

3. LNG PROJECT STRUCTURES IN CANADA

As the global LNG industry has evolved, a core group of base "project structures" or "economic models" has emerged, namely the tolling model, the merchant model and the integrated project model.



Under a tolling model structure, the LNG facility owner's role is limited to providing liquefaction services to owners of natural gas who have agreed to deliver feedstock to

the facility before offtaking the LNG produced. Given the lack of either upstream or downstream interests by the facility owner, the LNG project is generally limited to the liquefaction facility itself, which operates as a distinct profit centre on the basis of a portfolio of liquefaction tolling agreements, typically including a "use or pay" component.

Under a merchant model structure, the LNG facility owner will purchase feedstock natural gas from unaffiliated upstream producers before selling the resulting LNG to unaffiliated downstream buyers. Here — depending on downstream maritime transportation arrangements — the LNG project is again largely restricted to the LNG facility itself, which operates as a distinct profit centre, but with the distinction that the LNG facility owner is directly involved with upstream and downstream components of the LNG value chain.

A pure integrated project model structure is typified by multiple project proponents owning a consistent percentage of different components along the LNG value chain, most often including upstream natural production rights and the LNG facility. Here the LNG facility operates less as a distinct profit centre and more as a single component of a larger business enterprise involving a series of affiliated or non-arm's-length relationships and transactions, whether geared towards maximizing the value of downstream LNG sales or securing feedstock for power generation operations.

Of course, this categorization is based on broad strokes, and many hybrid approaches have been adopted. The exact composition of an LNG project's structure will depend on a variety of factors, including the nature of the participants involved, the degree of availability of feedstock natural gas, the amount of new build infrastructure required, risk tolerance and financing considerations. Towards this end, what is particularly interesting in the Canadian context is the multiplicity of project structures contemplated within a single jurisdiction.

The majority of proposed Canadian LNG projects appears to have adopted a variation of the integrated project model structure. These are generally located on the country's northwest coast, where project proponents seek to link British Columbia's substantial natural gas reserves to large-scale, new-build liquefaction and export facilities.

However, a number of other proposed Canadian projects exhibit qualities more suggestive of tolling or merchant structures, or structures that represent a hybrid of the two. These seek to take advantage of existing regional natural gas production and transportation infrastructure located in the vicinity of southwestern British Columbia and Canada's eastern Maritime provinces.

The diversity of project structures in Canada can be contrasted with other exporting jurisdictions in which a narrower range of project structures occurs or is immediately workable. Such diversity makes the range of proposed Canadian LNG projects interesting and compelling from both an investment and legal perspective.

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