Competing in the global LNG market
Evolving Canada's opportunity into reality
Projected LNG-related spending in coming years:

- $140-200 billion in natural gas drilling programs
- $30-50 billion for LNG terminals
- $10-15 billion for pipelines
- $10-15 billion for midstream operations
- Further significant spending for civil infrastructure
Introduction

A generational opportunity. Multi-billions of dollars of possible capital and operating expenditures. Taxes and other levies that will fund community development, education, training and social programs. Jobs, prosperity and the potential to thrust the BC natural gas industry onto the world stage. Those are just some of the benefits credited to the BC liquefied natural gas (LNG) opportunity. Sounds attractive – but there are multiple challenges, too. Environmental considerations, project infrastructure complexities, ensuring that First Nations are included, and creating a competitive fiscal and tax regime are not easily addressed. Moreover, the competition is not next door – it’s global – and BC isn’t the only jurisdiction wanting its share.

The global LNG industry is celebrating its 50th birthday this year with growing demand and an ever-increasing amount of new capacity proposed around the world – as much as 350 million (metric) tonnes per year (mtpa) – which, if all were built, would more than double current capacity by 2025.

Fifteen Canadian LNG export projects have been proposed and nine have already received export permits with the expectation that many more will be approved (with a view that ultimately the market and not the National Energy Board will determine which projects are viable). Proposed projects represent more than the equivalent of Canada’s current daily natural gas production of approximately 14 bcf/d.

Investment in Canada’s LNG industry will depend on whether LNG projects are competitive globally. Plentiful natural gas reserves alone will not support development. Understanding where Canada stands requires zeroing in on the factors that determine competitiveness. These include considerations such as:

1. Understanding the state of global competition and how other projects will impact the supply, demand and pricing balances
2. Creating a framework where the various First Nations communities will support projects
3. Addressing complex capital allocation decisions by global players, many of whom have multiple opportunities and are focused today on ensuring adequate project returns
4. Building a fiscal policy that is fair to multiple different constituents and ensuring that such fiscal policy will remain consistent over the life of the projects
5. Developing world-class competencies around people, processes and costs.

Unanswered questions revolve around many of these factors. Evolving the Canadian LNG opportunity from promise to reality requires addressing them head on.
Global competition

Canada’s extensive reserves, stable and reputable political environment, and transportation cost advantages won’t be enough to attract the attention of investors and secure long-term supply contracts in today’s competitive LNG market. Capital will always flow to the most economically viable project.

Global powerhouses including Australia and Qatar remain dominant threats to Canada’s LNG potential, though many face political and geographic challenges. Emerging supply markets such as East Africa and Russia currently operate below the radar, but could become future competitive threats if their projects get off the ground. And, closer to home, the US continues to increase its focus on the sector. Seven projects have already received approval in the US and the Cheniere Energy Inc. project is scheduled to produce its first cargo by late 2015. Where does Canada stand against US exports? Many argue that Canada has a transportation cost advantage based on shipping distance. The West Coast provides a direct route to Asian markets that’s shorter than the US and on par with Australia shipping times. To access Asia, the world’s premium priced LNG market, US cargos will have to travel through the Panama Canal. And, while the expanded canal will cut shipping times significantly, there is still much uncertainty around tolls.

Canadian LNG production not only faces competition from other countries but from other energy resources. Coal and nuclear power production is on the rise in many countries. Japan’s Prime Minister Shinzo Abe has suggested that the country may restart a significant portion of its nuclear reactors. And although Germany has taken strides to shutter all of its nuclear plants, we’ve seen a significant increase in German coal fired power generation – in part made possible by access to relatively inexpensive (certainly compared to LNG cargos) US coal supplies that have been pushed out of the US because of regulatory and market pressures.

Key questions

- How does Canada compare to other LNG producers?
- Is there a role for a diversified supply mix drawing from many geographies?
- What will be the outcome of the pricing debate?
- If it occurs, will a shift away from oil-indexation damage Canadian projects?
- How will the coal and nuclear energy industries respond? Will they “go quietly into the night”?
- How will China’s shale resources impact demand?
- Does Canada have a window of opportunity to get LNG produced and sent to Asian markets?
While much of the current demand for LNG originates from Japan and Korea, it may be China that represents the largest potential buyer of future LNG. The Chinese government has already declared its desire to significantly ramp up its use of natural gas, and reduce its over reliance on coal, which has caused very significant air quality concerns. In time, China expects to feed significant demand with its own shale gas resources but until that resource is developed, it is likely that Chinese demand for LNG will grow. Demand for natural gas in China could reach as much as 43 bcf/d by 2030.

Russian pipelines to China, LNG opportunities from Mozambique and buyers’ efforts to break the long-standing oil-indexed linked pricing mechanism also all contribute to fierce competition at the global level.

Canada’s Advantages
- Regulatory and market support for exports
- Projects led by global players (operators, customers)
- Cost advantages vs. competing projects (all-in transportation, operating costs)
- Participants hold equity interests in gas
- Stable legal and fiscal business environment
- Skilled local labor market in Western Canada

Canada’s Disadvantages
- Infrastructure required (facilities, pipelines, production and civil)
- Cost pressures (project construction, people shortages)
- Global competition
- Evolving pricing arrangements (oil price de-linking)
- Complex First Nations dynamics
- Continuing uncertainty regarding applicable fiscal regimes
The Canadian LNG industry is comprised of global players who all take their obligations to work cooperatively with Canadian First Nations communities very seriously. These developers bring positive global experiences to the table in doing just that in many other jurisdictions, and in many cases they have long-standing operations in Canada and mutually beneficial relationships already in place with many of the impacted First Nations communities. There has already been preliminary support for the proposed Kitimat facility and two north coast First Nations have already signed revenue-sharing agreements with the BC government related to the development of a proposed export terminal on their traditional territories near Prince Rupert, BC.

Still, this issue — gaining First Nations support — may be the most complex for energy companies to address. Technical and cost challenges such as LNG facility design can certainly impact project economics, but those issues are in many ways more manageable than gaining acceptance and support from communities that are determined to preserve their heritage and traditional territories and where there isn’t a shared consensus across all of the various First Nations communities.

Project proponents must continue to engage in extensive consultation efforts, and new models of cooperation and sharing will have to emerge. Training and education programs, real and lasting job opportunities, support for social programs, community investment and finding a way to share the other economic benefits are all critical tasks. And, to the extent that First Nations take up equity positions or participate in other creative gain-sharing structures as part of projects, attention will have to be given to make those structures transparent, well-understood and viable.

Though getting the deal-terms agreed to will require significant effort, additional challenges lie in implementation once the signing ceremony takes place. Aboriginal content provisions, funding models, effective training programs, and the reconciliation of competing interests, both within certain communities and across territories where boundaries are in dispute, will require the development of specialized skills and a culture of collaboration and patience.
Both the BC and Federal governments have a role to play. But simply granting regulatory approval will not be enough to move projects forward. Many anticipate the potential of ongoing legal challenges. That’s why all levels of government are proactively identifying creative solutions to address these issues.

Each of these obstacles requires careful consideration and thoughtful resolution. They are complex and time consuming – which increases risks and costs – and ultimately impact the competitiveness of the BC LNG opportunity. But notwithstanding the challenges, there is a positive way forward. Many First Nations communities recognize and want a part of the opportunity in BC’s LNG development plans. Ultimately, respect, trust and cooperation can be achieved by maintaining a collaborative mindset.
The capital agenda continues to dominate discussion at the C-Suite and boardroom table of the world’s leading oil and gas companies. Important strategic decisions around where, when and how to raise, invest, preserve and optimize capital have become increasingly challenging as companies struggle to achieve satisfactory returns and effectively manage risk.

Portfolio optimization has been the primary focus for global players as they seek to improve margins and generate adequate returns in a period of flat commodity prices and rising costs. That focus on cost and capital availability will continue to rule business decisions going forward.

Canadian LNG projects will have to compete globally for capital against projects in many jurisdictions. For example, the significant capital requirements for pipelines, infrastructure, liquefaction facilities and development of the required natural gas reserves for Canadian projects will have to compete with brownfield projects in the US where a far more developed infrastructure capable of supporting LNG exports already exists.

For participants looking to grab some share of the multi-billion dollar spend that will be needed to advance the BC LNG projects, the dynamics of this capital allocation process and the global organizations that are behind the projects add to the complexity. Where are the decisions being made? To secure a contract, do sales calls get made in Canada, Houston or somewhere in Asia? What is the timing of the spend? Will global procurement practices and world-class best practices in areas such as “modularization” leave room for BC content? And, will wage inflation zap profit margins both for the project owners and contractors?

Another challenge to those assessing an investment in a Canadian LNG project is the ongoing chess game around how LNG cargos will be priced. Our recent report, Competing for LNG demand: the pricing structure debate, digs into this challenge. LNG buyers are holding out for supply contracts that break – or at least modify – the traditional oil-indexed linked contracts. Sellers (the project developers) argue that their projects simply are not economically viable unless they earn sufficient premium over simple Henry Hub pricing models. Buyers are proceeding cautiously, pointing to the large number of announced “new build LNG projects” globally and assert that there will be plenty of LNG supply (given if all announced projects were to proceed there would be a significant oversupply based on current demand forecasts).

There is considerable risk to LNG buyers, however, that they will find themselves short of LNG. Given the structural challenges to achieving adequate returns that many of the global oil and gas companies are facing, and the cost blow-outs on many of the recent LNG projects, it seems unlikely that projects will proceed, in Canada or elsewhere, unless acceptable pricing arrangements are achieved.

Key questions

- Where will the spend occur? How much of the capital will be deployed directly in Canada?
- Who will make the purchasing decisions?
- Are innovative business models going to emerge?
- Will project finance leave room for Canadian players?
- How does securing supply contracts by operators play into capital allocation decisions?
And, no new LNG facilities, means no downward pressure on LNG prices.

Another dynamic affecting Canadian LNG projects is the structuring required to accommodate the multi-faceted nature of the projects. Upstream spending decisions, the need for significant investments in pipeline and midstream facilities, the multi-billion dollar investment in liquefaction facilities, ports, logistics, and the need for sophisticated marketing operations to manage complex processes leads to complex business structures. Add to the mix the need for project structuring to achieve desired risk management and mitigation objectives. All projects will also require very sophisticated financing structures to support the required project returns. The good news for Canadian projects is that the financiers will see relatively little geopolitical risk. The more challenging news is that many perceive relatively higher project cost risks, given the Australian LNG experience and Canada’s cost history in the oilsands.

Many wonder why decisions appear to be developing slowly in a world where there exists a significant arbitrage opportunity between North American natural gas prices and the value of those molecules sold as LNG into Asian markets. The complexity of the capital allocation process provides some insight.

- Stress and distress – e.g., liquidity issues and turnaround plans
- Customer and supplier analysis
- Preserving tax assets and minimizing costs
- Refinancing or restructuring debt, equity and other obligations
- Dealing with stakeholder relationships and pressure
- Dispute resolution

- Optimizing asset portfolio
- Delivery of synergies and effective integration
- Improving working capital and releasing cash
- Optimizing capital structure
- Optimizing tax and corporate structure
- Fund-raising (equity and debt) – IPO readiness, rights issues, PE, private placement and capital markets
- Optimizing funding structures
- Asset divestment
- Infrastructure projects
- Cost- and tax-efficient structures
Fiscal policy plays a crucial role in determining Canada’s competitiveness. Government must balance the pressures to achieve a fair return with the need to encourage investment in the sector. That will require collaboration between government and all relevant stakeholders to identify the most effective framework and ensure BC projects are competitive in the global context. There is already an established royalty framework that applies to the production and sale of natural gas in BC. The province also has sales tax, fuel tax, and carbon tax regimes and an extensive property tax system.

The 2014-15 BC Budget announced a proposed framework for an income tax regime applicable to income from liquefaction of natural gas at LNG facilities in the province. This “LNG Tax” will be a two-tier income tax with a tier-one tax rate of 1.5% and a tier-two rate that is yet to be determined, but could be up to 7%.

The tier-one tax rate is proposed to apply to an operator’s net income at the commencement of commercial production and to be deductible from the tier-two tax. The tier-two tax is proposed to apply to the net income less the costs associated with the capital investment from the construction of the LNG facility. The tier-two tax would only apply once the capital investment in the LNG facility is recovered.

The tax is designed to provide revenue to the BC government from day one of operation and then increase once initial capital costs are recovered. The current BC mineral tax operates in a similar manner so in some ways the concept of the tax isn’t unfamiliar. However, the LNG Tax is expected to encounter additional complexities given the multiple different ways in which LNG will be produced and exported.

The BC government recognizes the need to prepare a tax regime that is globally competitive and, after announcing the proposed framework in the Budget, is working with project proponents to ensure that the income tax rate will not deter investment. Recent consultations have focused on the tier-two tax rate and the income base on which the tax will be levied.

The implementation of a new tax regime is always challenging. The fiscal benefits of a resource endowment through a tax take must be balanced with the need for an adequate investment return for LNG developers. Revenue will only be realized if LNG projects proceed, and many believe BC’s large gas reserves will be stranded or very slowly developed and sold into low-priced North American markets if export LNG facilities are not developed.

Key questions

- When will BC LNG tax legislation be released and how will competitiveness be communicated?
- What support will be required to analyze and implement?
- How can certainty regarding future fiscal policy be achieved?
- How will the necessary civil infrastructure be funded, deployed and managed?
- What other regulatory changes are required?
Investment decisions hang on greater certainty around the application of the BC LNG tax, particularly the total BC tax take. Proponents are also looking for assurance that tax and other fiscal policies will not change adversely in the future once they have committed to projects and incurred capital costs. On a positive note for projects, the BC government has signalled through a very active process that it knows it must act quickly to provide this certainty to enable projects to move forward and compete globally.
Solving the cost challenge is not easy. These are multi-faceted projects being executed in difficult operating conditions. In Canada that means starting with little existing infrastructure, challenges in securing adequate labor capacity – at a fair price – and very stringent regulatory processes. Similar to the emergence of the oilsands industry some 30 years ago, in a relatively remote region of Northern Alberta, the LNG industry will be developing on predominately greenfield sites without some of the existing infrastructure that exists for many of the proposed US sites.

Moving LNG projects forward comes at a steep price and one misstep can result in significant cost overruns. We’ve already seen the effects of this in Australia and the result has left many cautious. Cost blow-outs have severely pressured project returns and challenged the viability of the Australian industry. Many of these same LNG developers are involved in the Canadian LNG projects and advancing these projects will require confidence that the Australian cost experience will not be repeated.

The costs associated with LNG grow even greater when labor challenges enter the equation. Finding the labor to advance Canadian projects will be challenging. High levels of development and construction activity are causing shortages of skilled labor across the country, e.g. mechanical, electrical and process engineers, construction foreman, welders etc. Exacerbating this challenge is the increased need for specialized LNG specific skill sets (aluminum welders, for example), where experience is limited in Canada. Increased demand for specialized skills will drive costs up and lead to higher salaries, perquisites and training costs, and, at the end of the day, high project costs. Adding to the labor force dynamic, the use in Canada of temporary foreign workers has recently come under fire.

To help solve the labor challenge, the BC government announced a LNG-labor working group that included 18 representatives from government officials, organized labor, the Haisla Nation and major LNG industry players. The group produced 15 recommendations to tackle apprenticeship, training and other challenges in growing the LNG industry. The report is publicly available and actions are underway to implement the proposed recommendations.

Key questions

- Where and what kind of job creation will exist?
- Canada’s record on project cost overruns is clear – how can LNG projects fare better?
- What are some of the innovative models to manage costs and other project risks?
- Where will the engineering, construction and other project related people come from as well as the long term LNG operators of the facilities?
- Can modules for LNG facilities be constructed offshore in lower cost markets like China and South Korea and shipped to the West coast?
Realizing better cost management and improving efficiency begins with the following steps:

1. Identify addressable cost base and set targets
2. Conduct analysis and examine cost levers to diagnose improvement opportunities
3. Manage implementation of initiatives for delivery of real benefits
4. Stabilize cost management program and rollout sustainable processes
5. Consistent approach across business units – to leverage learnings

Addressing labor concerns is only one of the important elements of successful project management. Project success also depends on a sophisticated and holistic approach to project and cost management, from the fundamental structural design of the organization, to creative contractual terms for project build-out, to the use of technology to increase reliability and reduce costs. Innovating at every turn is essential. Companies must re-think traditional business processes and embed digital oilfield concepts such as remote operations centers directly into projects at the outset, develop operating practices for the underlying natural gas development and production operations that align to the unique challenges and opportunities posed by unconventional resource development.

EY’s Performance Agenda framework

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Company specific issues

Leveraging the Performance Agenda framework, EY’s differentiator in achieving sustained change is through following the Performance Path. It supports our delivery methodology, and it addresses the four most common reasons businesses fail to execute their business performance initiatives.
How EY can help

There’s no denying Canada’s potential in the global LNG market, but success for players won’t come easily. Canada faces significant competition from projects around the world. Carving out a piece of the LNG demand pie will require Canadian projects to address five key factors impacting competitiveness: global competition, First Nations, capital allocation, fiscal policy and people, processes and costs.

Is Canada up for the challenge? We think it is. A world-class resource base, a geopolitically stable reputation, a long history as an exporting nation, projects being led by major LNG players who hold equity positions in the underlying gas reserves, the learnings from past experiences with mega-projects (including the Canadian oilsands and those gained by the proponents in other jurisdictions), support for the industry from both the BC and Federal governments, and a culture of innovation all set the stage for Canada’s LNG projects to compete effectively on the global stage.

At EY, we’re focused on supporting entities from all spectrums of the LNG value chain from the project owners to the LNG buyers to the myriad of suppliers and contractors and the various other stakeholders in activities including the following:

- The assessment of the viability of their projects (considering the various competitive factors)
- Structuring the Canadian operations to accommodate the project complexity and fiscal regime
- Sourcing opportunities to inorganically grow their exposure to the Canadian LNG opportunity
- Creating world-class and innovative business operating models and supply chain processes
- Supporting the deployment of world-class capital project management capabilities
- Creating innovative labor models to address labor concerns
- Helping develop high performing joint venture organizations from planning to operation

Asking the right questions is crucial to positioning the BC LNG opportunity for success. Answering those questions, however, isn’t as easy as it sounds. Companies, government and communities will have to work together to ensure BC is set up for success and that we all stand to benefit from our resource potential.
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About EY
EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

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How EY's Global Oil & Gas Center can help your business
The oil and gas sector is constantly changing. Increasingly uncertain energy policies, geopolitical complexities, cost management and climate change all present significant challenges. EY's Global Oil & Gas Center supports a global network of more than 9,600 oil and gas professionals with extensive experience in providing assurance, tax, transaction and advisory services across the upstream, midstream, downstream and oilfield service sub-sectors. The Center works to anticipate market trends, execute the mobility of our global resources and articulate points of view on relevant key sector issues. With our deep sector focus, we can help your organization drive down costs and compete more effectively.

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