

Lack of B.C. LNG Terminals Won't Prevent Canadian Gas Getting to World Markets

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Prior to 1985, natural gas prices were regulated and tracked the price of oil. Deregulation in 1985 presented western Canadian natural gas producers with the challenge of low prices, excess supply and market access issues. But over time, market forces led to development of additional infrastructure between Canada and the United States and within the Lower 48. The North American natural gas market has emerged as the single largest and most liquid natural gas market in the world. However, it is only now that North America is becoming a major driver in developing a global LNG market.

Canadian producers find themselves in a similar situation today after surging shale gas production in the United States — destination of almost all of Canada's natural gas exports — began crowding out flows to its previously reliable market, says **Art McMullen**, Regional Director, Asia Pacific, for Calgary-based **Sproule**.

"The fundamental issues faced in the 1980s, following deregulation, are broadly like today," he said. "However, the context and scope are quite different. LNG exports have globalized the natural gas industry and Canadian producers face the challenge of gaining access and competing in a global market. Fortunately, Canada has exceptional unconventional resources and an industry that has demonstrated an ability to innovate and a willingness to invest in the required technology and infrastructure."

U.S. natural gas production swelled to a record annual level of 74 bcf per day in 2015, more than 40 per cent higher than production levels a decade earlier, reducing U.S. reliance on imports while lowering domestic prices and triggering export of LNG to world markets. The U.S. is expected to become a net exporter of natural gas on an average annual basis by 2018, per U.S. **Energy Information Administration's** Annual Energy Outlook 2017 reference case.

Meanwhile, the same technology that unleashed the shale gas revolution in the U.S. is opening vast natural gas resource plays in western Canada — in the Montney, Duvernay and Muskwa formations — even as Canada's prized export market dries up — creating one monumental challenge: how to monetize that immense new resource?

The shale gas and subsequent tight oil developments have turned the energy market on its head. Where 10-15 years ago, it seemed peak oil and gas production was at hand in North America, and plans were drawn up to build dozens of liquefied natural gas import facilities along U.S. coastlines, the situation has now reversed, with surging U.S. natural gas production turning yesterday's LNG import projects into today's export facilities, McMullen said. This scenario has provided U.S. LNG export projects a competitive advantage given that they have existing storage facilities (generally 20 per cent of the cost of a liquefaction facility), infrastructure and are connected to the integrated North American gas market. This is not the case for the proposed Canadian projects.

Production surge

The surge in U.S. gas production is a reflection of the massive scale of the North American shale gas development, and subsequent tight oil opportunities, which unleashed access to the source rock that fed conventional reservoirs — and contains many times more gas and oil than trapped in the stratigraphic and structural traps above them.

"The volume of hydrocarbon in the source rock, the 'kitchen,' is vastly larger than the volumes accumulated in conventional reservoirs," said McMullen. "In the past, we had to explore and find oil and gas and it was a question of, could you discover the accumulation and then make money at it? Now, we don't need to discover where the oil and gas is, we *know* where it is. It's no longer a matter of discovery of the accumulation, it's more proving the productivity and the profitability of the resource that is needed, because not all these plays are the same."

Since advances in horizontal drilling and multistage fracturing technology began unlocking unconventional plays in the mid-2000s, domestic oil and gas has flooded the U.S. market, prompting the U.S. to overturn its decades-long ban on oil exports and turn on the taps to natural gas exports.

In early 2016, the Sabine Pass facility in Louisiana became the first operating LNG export facility in the Lower 48 states. Four other LNG export facilities are under construction in the U.S. and expected to be operating by 2021, says the EIA, with a combined export capacity of 9.2 bcf per day. For comparison, Canada produces about 14.5 bcf per day of natural gas.

And for a time, it appeared Canada's West Coast would be inundated with LNG export terminals. Close to 20 projects were proposed after the B.C. government released its LNG Strategy in 2012. With easy access to Asian markets — which consume some 70 per cent of sea transported LNG — and a growing reserves base drilled up in B.C. and Alberta, it seemed a natural.

But headwinds soon followed as other regions beat Canada to the LNG punch and an international gas glut suppressed prices in premium Asian markets — and project after project was deferred or withdrawn.

In July, the \$36 billion Pacific North West LNG project led by PETRONAS was cancelled. The Malaysian state-controlled firm had spent \$6 billion in 2012 to acquire Calgary-based Progress Energy Canada Ltd. for its natural gas assets in northeast BC and northwest Alberta — which were to feed its planned LNG terminal near Prince Rupert.

PETRONAS has publicly maintained that it remains committed to developing its Canadian assets, which at 32.2 trillion cubic feet of reserves and contingent resources primarily in the Montney, represent its second-largest gas resources portfolio after Malaysia. “Despite the decision not to proceed with the PNW LNG project, PETRONAS remains committed to monetize the natural gas resources in the North Montney area in Canada,” the company said.

Indeed, McMullen said the seeming demise of the B.C. LNG sector does not mean those assets will become stranded, primarily due to North America’s unique natural gas infrastructure and integrated market. “We have the North American gas grid here where everything is connected; it’s liquid, it’s moveable and it’s swappable.”

“Canadian gas produces to the grid and is part of the gas getting liquefied and moving to Southeast Asia as LNG — it just happens to be going through the U.S. Gulf Coast now,” he said. “We are farther away, at the end of the supply chain, and it would be advantageous if we had another outlet on the west coast, but we don’t. Anything PETRONAS does with its natural gas now will basically be predicated on feeding the North American gas grid and having it exported from some other off take point for LNG. The outlet on the LNG side right now just happens to be the U.S. Gulf Coast.”

The U.S. based projects have an advantage over Canadian projects due to the conversion of existing import terminals into export terminals, making them a lot more cost competitive. This results, paradoxically, from the forecasts of a decade ago that foresaw, incorrectly, a coming shortage of natural gas in North America that prompted a burst in construction of LNG importing facilities. This also gave U.S. projects a head start in terms of timing and regulatory hurdles. “Those export terminals they are or will be exporting from are the same import terminals that were already approved and under construction. While the construction of a liquefaction plant still requires a large capital expenditure, significant cost savings are realized from use of the existing storage, pipelines and supporting infrastructure.”

Additionally, the business model for LNG differs between the two countries. Projects in the U.S. are tolling projects, whereas in Canada they are generally closed, integrated projects. Most LNG buyers view Canada as part of a portfolio play — i.e. it

is not U.S. vs. Canada but both. Canadian based projects have failed, in part, because they did not get to Final Investment Decision (FID) during the last window before the downturn in global LNG prices. Uncertainty in the regulatory and approval process also has a deleterious impact.

Competitive resource

Fortunately, the quality of some of Canada's emerging natural gas plays, like the Montney that straddles the Alberta-B.C. border, enable them to be commercial notwithstanding today's bottleneck in export capacity, he said.

A recent benchmarking study of North America's two major shale gas plays, the Marcellus play in the north-eastern U.S. and the Montney, found that while the Marcellus dry gas has a supply cost advantage, producers in the liquids-rich Montney play enjoy higher netbacks.

A study completed by the Daily Oil Bulletin using the CanOils database, compared data from Q2/2017 and Q2/2016, and found the Montney produced higher netbacks of \$18.30 per boe during the quarter versus average netbacks of \$15.07 per boe in the Marcellus, showing the Montney to be highly competitive. Both basins also accomplished notable cost savings year-over-year, with Montney supply costs falling by 13 per cent and Marcellus costs declining by 7 per cent.

"Of the unconventional plays in North America, the Montney is one of the best — certainly a world-class play, ideally suited to underpin an LNG mega-project — and the companies that are developing it are doing a terrific job of driving down costs, while increasing recovery and productivity," McMullen said.

"I expect to see continued, active development of Canada's unconventional resources as we have highly competent people developing what happens to be a competitive, world-class resource base. In the interim however, development of Canadian LNG export projects seems less likely with regulatory uncertainty, lower LNG prices and increased competition for capital in other oil and gas regions and may not come again until the next window, expected in the mid-2020s."