Sightline Energy Market Update

British Columbia's LNG Industry Faces Gloomy Economic Prospects in Today's Global Market

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Just a few years ago, it seemed as if British Columbia stood on the brink of a liquefied natural gas (LNG) export boom. No fewer than 21 different LNG proposals peppered the province's coast,[1] all designed to supply Asian markets with fuel from the methane-rich Montney Shale[2] in northeastern BC. The provincial government at the time fueled the LNG hype by handing out permits, along with inexpensive power, tax breaks, and other subsidies.[3]

But progress on BC's LNG proposals has ground to a virtual halt, with global energy investors remaining on the sidelines or focusing on more promising regions for LNG projects. Project backers have already terminated 6 of the 21 projects, and the rest remain in limbo.

Three key trends turned BC's LNG boom into LNG gloom:

- **A global price collapse.** As recently as 2013, Pacific Rim LNG prices stood at more than $15 per million BTUs. (LNG prices typically are measured in US dollars per million BTUs—shortened to "mmBTU".) Those prices virtually guaranteed healthy profits for new LNG plants in the province. As of the date of publication of this analysis, the May 2018 futures contract for the "Japan/Korea Marker"[4]—the price benchmark for Asian LNG imports—stands at $7.50 per mmBTU, less than half its price in 2013. Global oil and gas prices collapsed in 2015 and 2016, and they remain depressed today.
- **Dismal prospects for profit.** BC's LNG investors face immense capital costs in at least three areas: developing new gas fields in the Montney Shale; building new pipelines to convey the gas to the coast; and building liquefaction plants. The projects face additional operational costs for transportation and liquefaction. To succeed financially, BC LNG projects need high prices to recover their enormous costs. But independent analysts have found that in today's low-price environment, BC LNG projects might not even break even, let alone yield a long-term profit.
- **A global LNG glut.** Across the globe, LNG liquefaction capacity is on the rise. As documented by the International Gas Union's 2017 World LNG report,[5] huge new LNG plants have come online in Australia, the US Gulf Coast, Russia, Malaysia, and Indonesia

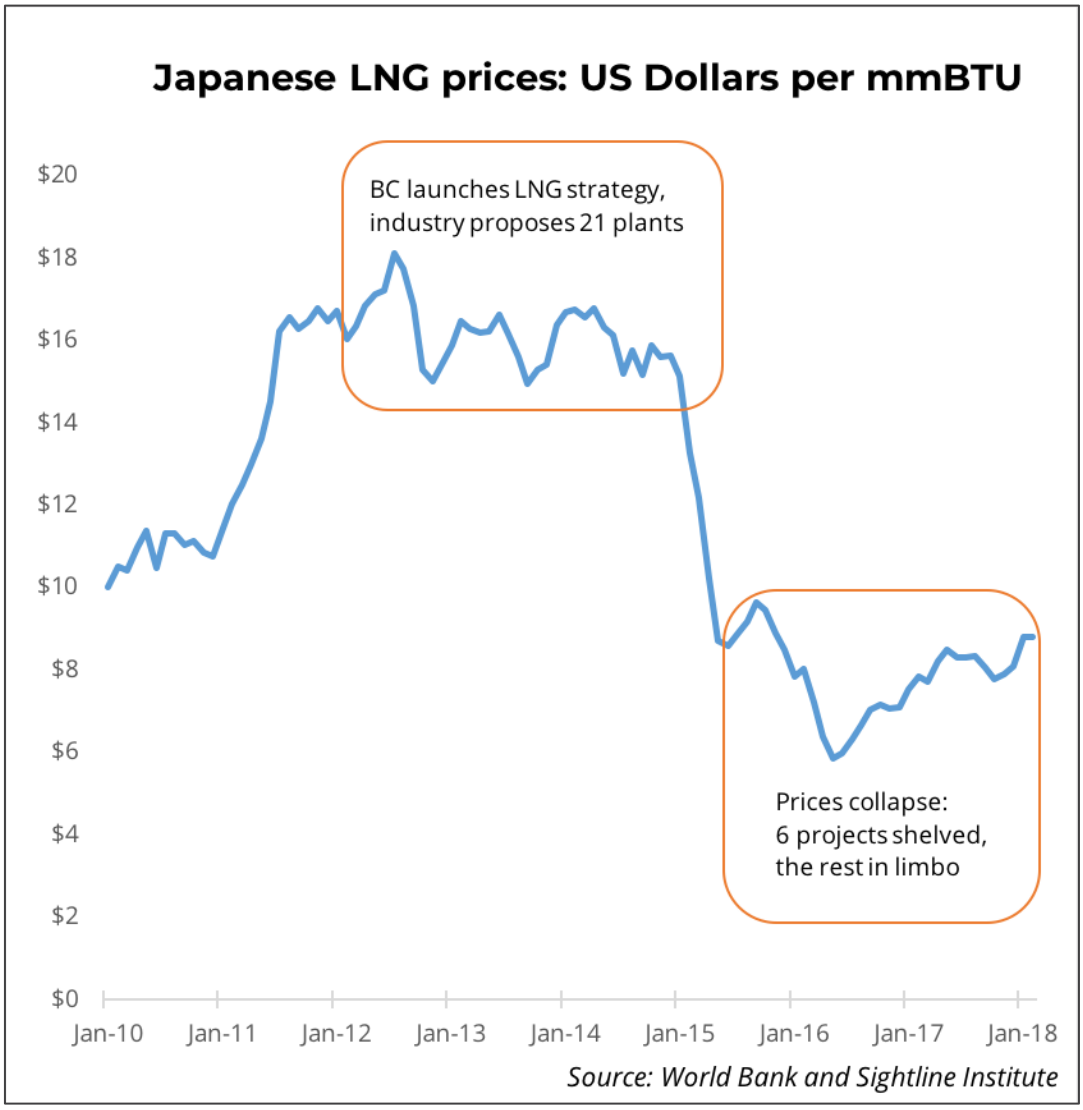
over the past two years. Additional LNG plants will come online by 2020, with the US Gulf Coast—supplied with cheap natural gas from fields in the booming Permian Basin—accounting for the lion's share of new capacity. As supplies grow, markets actually expect global LNG prices to drop even further: the May 2019 and May 2020 Japan/Korea Marker contracts stand at $6.55/mmBTU.

BC's LNG ambitions: A slow-motion collapse

British Columbia's provincial government launched an ambitious LNG development strategy[6] in early 2012, predicting a flourishing LNG export industry with at least three plants in operation by 2020. But after an initial flurry of optimism and proposals for no fewer than 21 different LNG export proposals for the BC coast, prospects for the industry have faded. Today, more than 6 years after the province announced its strategy, no LNG projects have even begun construction in the province. And despite robust support by the BC government—including generous tax and electricity subsidies—project backers have pulled the plug on six proposals since the beginning of 2016:

- ➔ In February 2016, AltaGas pulled out[7] of its Douglas Channel LNG project in Kitimat because of "worsening conditions in global energy markets."
- ➔ In March 2016, Royal Dutch Shell shelved its Prince Rupert LNG project,[8] with CBC reporting that "LNG expectations have taken a hit in recent years as the global markets have been flooded by supply."
- ➔ In July 2017, Malaysian energy giant Petronas scrapped plans[9] for its controversial[10] Pacific NorthWest LNG project in Prince Rupert, citing the "extremely challenging environment brought about by the prolonged depressed prices and shifts in the energy industry."
- ➔ In September 2017, Nexen Energy, a subsidiary of China National Offshore Oil Corp., scrapped plans for its Aurora LNG project, mentioning "an adverse macroeconomic environment" as a key reason.
- ➔ In December 2017, backers scrapped the proposed Malahat LNG project on Vancouver Island.
- ➔ Just this month, Australia's Woodside Petroleum dropped its efforts[11] to develop the Grassy Point LNG project north of Prince Rupert.

This dismal track record reflects the poor economic fundamentals of BC's LNG industry. Global LNG prices started to collapse in early 2015, due to two key factors. First, global oil prices went into freefall after OPEC boosted supplies to retain its global market share in the face of rapidly growing US oil production. The oil price collapse pulled down LNG prices with it, as many long-term LNG contracts had been pegged to the price of oil. Second, a raft of new LNG projects had come online in the era of high prices, putting global LNG markets into oversupply.



The price collapse exposed a fundamental flaw in the province's strategy: compared to many regions around the world—Qatar, the US Gulf Coast, Russia, and Western Australia among them—the cost of BC's LNG projects is simply too high. Global financial markets have steered clear of BC for LNG development and have channeled investment towards lower-cost LNG projects around the globe with greater odds of financial success.

In today's low-price LNG environment, cost containment is key to profits. But two critical factors drive up the cost of BC's LNG projects. The first is the need for major new pipelines. Transporting methane from the Montney Basin to BC's coastline would require massive upfront capital expenditures for new pipeline infrastructure. Those costs drive up the prices that LNG plants would have to pay for their feedstock. Second is construction costs. LNG projects built on "greenfield" sites—i.e., previously undeveloped locales—cost far more to build than projects at "brownfield" sites near existing oil and gas infrastructure. Worse, LNG plant construction costs have soared[12] in recent years, particularly for large, complex projects located in remote areas,

conditions that apply to virtually all of the province's LNG proposals. In its report *The End of the LNG Megaproject*,[13] consulting firm Ernst and Young found a pattern of "well-documented examples of cost and schedule overruns on greenfield LNG projects."

High construction costs and schedule delays might not matter much if LNG prices were on the upswing. But many global analysts forecast[14] that global LNG markets will remain oversupplied for years, keeping prices in check. The International Gas Union's 2017 World LNG Report[15] identified 340 million tons per year of LNG liquefaction capacity, with an additional 115 million tons scheduled for completion by 2020 and an astonishing 879 million tons of new capacity proposed worldwide—numbers that virtually guarantee a sustained glut in global LNG supplies.

Not even the massive tax and energy subsidies[16] promised by BC's former Liberal government could brighten the gloom for LNG backers. As the International Gas Union pointed out in 2016,[17] "The British Columbia government provided clarity on taxation in 2014 and 2015 via an LNG export-specific tax and royalty regime. Although important, these steps are unlikely to have a major impact on the overall pace of project development." Even with subsidies, BC's nascent LNG industry faces a steep uphill climb to profitability in today's global market.

Conclusion

The combination of high costs and sustained low prices has led most analysts to conclude that BC's LNG projects aren't viable in today's market—and may not be viable for nearly a decade, if not longer. The Oxford Institute for Energy Studies declared[18] that "the window of opportunity to capture premium Asian markets has eluded" BC's LNG projects. And some energy analysts believe[19] that even if global LNG markets do rebound, the industry will boost supply by expanding existing plants rather than building brand new ones. Ernst and Young, for example, found that faster development cycles at brownfield sites could help close "any supply gap that emerges before new greenfield capacity is built."

Just as troublingly, the global LNG industry faces new threats from the quickly falling cost of renewable energy. A 2017 report[20] from Moody's Investor Services identified significant long-term risks to the global LNG industry from rapid adoption of wind, solar, and energy storage technologies in the very markets that the LNG industry depends on for growth: "The potential for oversupply in a falling demand environment raises the specter of low commodity prices, increased pricing volatility and weaker profitability and cash flow." The report singles out high-capital cost LNG projects as facing an elevated risk of becoming "stranded assets," i.e., underutilized capital projects with no hope for profitable recovery.

In short, a confluence of factors—from a global LNG supply glut, to high capital and development costs, to long-term uncertainty in LNG demand—has converged to undermine the financial prospects for LNG developments in British Columbia. The so-called "window of opportunity" for BC's LNG industry may not just be closed temporarily but boarded up for good.

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