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THE NATURAL RESOURCE ECONOMY

True North in Canadian public policy

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BC's LNG Projects: A Turning Point for Canada's Energy Industry

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Introduction

Canada's economy cannot prosper without a growing and healthy resource sector. For years the oil and gas industry has struggled with prices in North America well below those elsewhere in the world. The announcement that two Liquified Natural Gas (LNG) projects – the LNG Woodfibre and LNG Canada projects – to export natural gas to Asia are going ahead is a potential turning point for Canada's energy industry. This paper explores the considerable benefit to Canada from natural gas reaching new international markets.

Before turning to the statistics on the importance of these projects, it is worth emphasizing that, while natural resources are 16.6 percent of Canada's GDP, this does not fully convey their impact on our society (Cross 2015). The wealth from natural resources is as important for our political system as the economy because it helps support the middle class.

Natural Resources Support the Middle Class

Much has been made of the rise of populism and protectionism in the US and parts of Europe while their inroads in Canada have been less pronounced. The growth of natural resources over the past decade helps explain why Canada avoided the populist backlash seen elsewhere. The upheaval in the US political system is understandable after 8.5 million Americans lost their jobs during the Great Recession (a 6.5 percent drop, more than double the loss in Canada) and 10 million had their homes foreclosed even as hundreds of billions of dollars were diverted to bailing out large financial institutions. Many of the people losing jobs and homes in America's industrial heartland were middle class, the traditional bedrock of a stable political system.

Canada's middle class certainly is being affected by technological change and the gradual erosion of factory jobs. However, overall the middle class in Canada fared relatively well in recent years partly due to steady growth in sectors such as natural resources and construction (a stable banking system also was important in allowing housing to grow in Canada as interest rates plunged) (Sheikh and Cross 2015).

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In the US, these blue-collar alternatives to manufacturing were not nearly as plentiful. If Canada had faced the same financial and economic crisis as the US, we might have experienced similar political turmoil. But we did not, and Canada can partly thank its resource sector for that. This point cannot be overstated: as UBC economist Kevin Milligan puts it: "nothing has contributed more than natural resources to buttressing the Canadian middle class against the rapidly changing global economy of the 21st century" (Milligan 2018).

At a time, then, when policy-makers are concerned about the "future of work," the potential for technology-induced dislocation, and the uncertain prospects for the middle class, Canada's natural resource sector can and should serve as a ballast for working-class Canadians as well as a source of new opportunities for Canada's Indigenous peoples.[1]

A Signal to the World

Another example of how statistics do not tell the whole story is the positive impact launching LNG projects has for Canada's image abroad. While important in itself, greenlighting these projects sends a broader message to investors around the world that Canada is able to undertake large resource projects. Before these announcements, Canada was acquiring a reputation as hostile to large investments in resource projects, reflecting the cumulative weight of many delays or cancellations (Veldhuis et al 2018).

Most notorious is the Trans Mountain Pipeline, now in its sixth year of development with a minimum of two more years before it is built, if ever, even after the federal government was forced to acquire it. The Energy East pipeline was a victim of regulatory overkill. The Northern Gateway pipeline was quashed by the courts and cabinet.

Beyond pipelines, most of the major international oil companies have sold off their interests in the oilsands, with no proposals for building new plants in the foreseeable future. Even in Ontario, which many do not associate with natural resources, the collapse of investor interest in the Ring of Fire mining projects was a major setback for Northern and Indigenous development and the overall economy. Simply put: we have a real and perceived problem with getting major energy infrastructure projects approved, constructed, and operated in this country.

Canada definitely needs a mega project to succeed in order to show investors that it is capable of building major resource projects under its current political and regulatory regimes. This makes the LNG projects important for several reasons including (but hardly limited to) Canada's image at home and abroad. It may not be entirely coincidental that the announcement of these projects was quickly followed by the initiation of the public review process for Gazoduq's $14 billion LNG proposal connecting Ontario to Saguenay in Quebec.

The economic impact of the LNG projects

The LNG Canada consortium is planning to build a 670-kilometre pipeline from Northeastern BC to a liquification terminal at Kitimat. The Woodfibre project involves a short 47-kilometre pipeline to its terminal near Vancouver. Not all the details have been finalized, but we can sketch the outlines of their estimated economic impact. To help the analysis, Statistics Canada was asked to use its Input/Output model to simulate the impact of building a pipeline from Dawson Creek to Kitimat and expanding BC's natural gas output by 10 percent.

A brief word about the Input/Output estimates. These are not the projections of a model in the conventional sense. Economists build models as a simplification of reality. The Input/Output model is based on the Supply and Use Tables, which is a replication of the full complexity of how businesses, governments and consumers allocate their spending. In particular, it uses a wide variety of data, including detailed tax records of individual firms, to understand what each industry, at a fine level of detail, purchases as its inputs to produce its outputs. Because of this meticulous accounting the data take several years to compile, the major drawback of the estimates. However, experience shows that firms do not change their business practices and technology very much from year to year, so the accuracy and detail of these estimates more than compensates for their lack of timeliness.

> "There are three major benefits from the LNG projects: building the pipelines and terminals; increasing BC's natural gas production; and raising the price received for natural gas exports."

The projections used in this paper are deliberately cautious. First, they do not include the impact of building the large terminal at Kitimat needed to liquify the natural gas before it is shipped to Asian markets because the exact details are not yet available about the allocation of construction between Asia and BC. Second, the initial scenario assumes natural gas prices in Asia are the same as in North America. Undoubtedly this is too cautious, as the main motivation for investing to reach new markets in Asia is the higher price of natural gas. However, examining a scenario where prices are unchanged separates the impact of higher exports to Asia between the volume of natural gas produced and the price it receives.

There are three major benefits from the LNG projects: building the pipelines and terminals; increasing BC's natural gas production; and raising the price received for natural gas exports. The impact of each is examined separately.

Construction

Building the Coastal Gas Link pipeline involves a $6.2 billion expenditure over the next 2 to 3 years. This alone is one of the largest investments ever undertaken in Canada, even without accounting for the liquification terminal. At full capacity, it delivers 14.0 million tonnes per annum of natural gas from Dawson Creek to Kitimat. The $1.6 billion Woodfibre project carries 2.1 million tonnes per annum of natural gas to its terminus on the West Coast. Together, the two pipelines deliver a volume of natural gas equal to nearly half of BC's current production.

Export and production volumes

Once built, the LNG plants result in a permanent shift of natural gas exports to Asia. At full capacity and with the same natural gas price as in North America, the LNG Canada project will increase exports to Asia by $5.9 billion a year; the Woodfibre project adds another $500 million. However, 90 percent of this increase in shipments to Asia is assumed to come from lower exports to the US since new production cannot increase enough to meet all the new demand (at least in the short-term).

The net impact is a 10 percent boost to natural gas exports and production in BC, worth $563.6 million using the same price as its $5.02 (Canadian) average recorded in 2014 (the last year available in the Input/Output estimates). This forecast of 10 percent more output could well prove to be overly-cautious, but it is best at this point to make prudent projections. With the BC economy approaching full employment, it is questionable how fast the industry will be able to expand in the short-run.

Higher export prices for natural gas

The higher price for natural gas in Asia than in North America is the principal rationale for LNG projects. Higher prices are needed to justify building a $6.2 billion pipeline to the BC coast. Without higher prices, it would be more profitable to simply ship natural gas to the US on existing pipelines.

> "The higher price for natural gas in Asia than in North America is the principal rationale for LNG projects."

Canada currently sells its oil and gas at a discount in North American markets because it cannot access better prices on world markets. The price of natural gas in North America is below $5 per mmbtu while the price in Asia is around $11 (Canadian oil is sold at an even larger discount to the world price of oil). Selling at a lower price deprives Canada of billions of dollars of export revenue, money that could be used to finance other investments and fund government services.

Of course, the same rationale for selling natural gas at a higher price in Asia also holds for the proposed pipelines connecting Alberta's oil to Asian markets. BC appears hypocritical in allowing its own natural gas industry to benefit from access to Asian markets while denying Alberta's oil the same relief. The importance and potential benefits of moving Alberta's oil to world markets was underscored in November 2018 when the Canadian price hit a record low near $13 (US) a barrel, below the depths plumbed during the 2015 crash in world oil markets. This pushed the discount for Western Canadian Select oil compared with the benchmark West Texas Intermediate oil price to $40 a barrel.[2]

The largest potential impact of LNG exports to Asia is raising the price rather than the volume of natural gas exports. Currently, natural gas exports are limited to the US, where the price is well below those prevailing in Asia. If prices remain higher in Asia, then all the exports diverted from the US market also receive higher prices on top of the 10 percent increase in output.

Higher prices in Asia than in the US market substantially raise the potential gains from LNG exports. The estimates in Table 1 are based on the new pipelines operating at full capacity and shipping all of their natural gas to Asia. If the price of natural gas in Asia was unchanged at $5.02 per mmbtu, the net impact would be to raise net exports by $563.6 million a year, entirely due to the 10 percent hike in production. This is because most of the exports to Asia receive the same price as in the US in 2014.

Table 1: The impact of LNG exports under two price scenarios ($5.02 and $10.00 per mmbtu)

	Annual increase in exports at $5.02 (LNG Canada)	Annual increase in exports at $10.00 (LNG Canada)	Annual increase in exports at $5.02 (Woodfibre)	Annual increase in exports at $10.00 (Woodfibre)	Total annual increase at $5.02	Total annual increase at $10
Total	$5.863 billion	$11.667 billion	$502.6 million	$1001.2 million	$6.366 billion	$12.668 billion
From new output	$519 million	$1.033 billion	$44.6 million	$88.8 million	$563.6 million	$1.122 billion
Diverted from US	$5.344 billion	$10.634 billion	$458.0 million	$912.4 million	$5.802 billion	$11.546 billion
Net increase in export revenues	$519 million	$5.804 billion	$44.6 million	$498.6 million	$563.6 million	$6.303 billion

However, if the price of our natural gas exports to Asia rose to $10 (Canadian, or about US$7.50 at today's exchange rate, well below the current price of US$11), then the boost to exports increases sharply to $6.366 billion. This is because not only does the 10 percent increment in new production receive the higher price, but the other 90 percent of exports to Asia that is diverted from the US market also receives nearly double the US price. This demonstrates the large benefit to Canada's exports from reaching international markets where prices are higher.

Conclusion

It is worth underscoring the uncertainty surrounding these estimates. There are many unknowns, including the price of natural gas and the exchange rate of the Canadian dollar several years in the future. As well, it remains to be seen whether success in building these LNG plants will make it easier to construct other LNG projects. Their demonstrated success may encourage other projects, but the BC government is threatening to block new developments because of their impact on greenhouse gas emissions.

At a minimum, however, the two projects underway will result in billions of investment in constructing new pipelines and terminals and then tens of billions over the following decades in higher export earnings in Asian markets. LNG serves as a model for how Canada's economy also could benefit from diversifying oil exports from North America where prices are low to world markets where prices are higher. These projects therefore will be good for Canadian workers and good for the Canadian economy.

About the Author

Philip Cross is a Munk Senior Fellow at the Macdonald-Laurier Institute. Prior to joining MLI, Mr. Cross spent 36 years at Statistics Canada specializing in macroeconomics. He was appointed Chief Economic Analyst in 2008 and was responsible for ensuring quality and coherency of all major economic statistics. During his career, he also wrote the "Current Economic Conditions" section of the Canadian Economic Observer, which provides Statistics Canada's view of the economy. He is a frequent commentator on the economy and interpreter of Statistics Canada reports for the media and general public. He is also a member of the CD Howe Business Cycle Dating Committee.

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Endnotes

1 For a specific application to LNG, see Ken Coates, 2018, *Catching the Next Wave: How BC First Nations Can Benefit from Another LNG Boom,* Macdonald-Laurier Institute, April, available at https://macdonaldlaurier.ca/files/pdf/MLI_LNGBoom_Final_web.pdf.

2 Western Canadian Select from the oilsands will always receive an even lower price because it requires more refining.

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