

# B.C.'s multibillion-dollar path to an energy powerhouse

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Rejean Tetrault is happy to be warming up in “the doghouse.”

It's minus 25 C, but the operations manager for Shell Canada Ltd. is shielded inside a steel shed on a barren stretch of northeastern British Columbia. Other Shell employees and contractors, wearing ski masks under their hard hats, take their positions in the control room and on the drilling floor.

Mr. Tetrault keeps a close eye on electronic monitors in the shed, as a drilling rig cuts deep into the rock below to tap into the province's new mother lode: natural gas.

Advances in energy technology in recent years have revealed that northern B.C. hosts an enormous amount of natural gas – an estimated 271 trillion cubic feet within the B.C. portion of the Montney play alone. It's enough to keep production flowing for about 100 years.

For the debt-burdened province, the promise of a flourishing new industry is mouth-watering. The B.C. government sees a \$1-trillion economic bonanza and jobs measured by the tens of thousands over the next three decades, as global energy players flock to invest in natural gas production and export facilities. The Canadian energy industry and the B.C. government hope this region will one day be mentioned in the same breath as Alberta's oil sands for economic importance to Canada.

“My children's children might be working in this industry. I know it freaks people out when I say that,” says Mr. Tetrault, who moved with his wife and three kids to Fort St. John from Calgary in 2011. “My children's children's children might still be working on this.”

With its ambitious Groundbirch project, Shell is among more than 30 companies operating hundreds of well sites in British Columbia's Montney shale gas play.

These are still early days, but multinationals are being lured to B.C. by the prospect of piping the gas from the north to export terminals they want to build in the Prince Rupert and Kitimat areas on the West Coast. Plans call for the prized commodity, used for heating, electricity production and a host of industrial applications, to be super-cooled into liquefied natural gas, loaded onto ships and exported to LNG-thirsty customers in Asia.

For energy companies in B.C., a wide pricing gap in global natural gas markets presents a massive opportunity. U.S. spot prices averaged \$3.70 (U.S.) per million British thermal units last year (although they have spiked recently due to the cold snap). By contrast, customers in Asia, where gas isn't as plentiful, often pay four times that.

Natural gas producers here are desperate to capture those strong prices abroad, because the domestic industry has suffered a supply glut and low prices for years. Gas exports from Canada to the United States have fallen nearly 25 per cent since 2007. The U.S. shale gas boom has swamped the market and hurt demand for Canadian natural gas.

But B.C.'s gas windfall is far from a sure thing. Canada is behind in a global race to supply LNG, and rival producers are coming on strong. British Columbia's fledgling LNG industry will face fierce competition from an array of projects in Australia, Qatar, offshore Africa, Russia, the U.S. Gulf Coast and Alaska.

“In particular Australia and to a lesser extent Nigeria could emerge as significant LNG suppliers, with Australia challenging Qatar as the world's largest LNG exporter,” according to the Canadian Association of Petroleum Producers.

The risk for B.C. is that other competing LNG producers will get to market first, quench demand in Asia, and push prices back down to the point where multibillion-dollar projects on the West Coast fail to generate solid returns.

## Boom Town

While the B.C. government has been highlighting a flurry of proposals for LNG export terminals in the northwestern part of the province, the northeast is where the tale of the energy promised land begins.

Signs of a mini-boom are everywhere across the Fort St. John area. It's remarkable, given that natural gas prices are down 70 per cent from a record high in late 2005. Instead of doom and gloom, civic leaders are decidedly upbeat.

"The reality is that Asia is looking at us, and so that puts a lot of attention on northeast B.C., the province and Canada as a whole," says Fort St. John Mayor Lori Ackerman.

The region's airport is bursting at the seams, the local Wal-Mart is starting a major expansion and the Winner's department store is preparing for a spring opening. Average prices for single-family detached homes surpassed \$372,000 (Canadian) in 2013, up 16 per cent since 2011.

Shell opened a new office building last year on former swamp land. Neighbours in other buildings on the road near the Fort St. John airport include the B.C. Oil and Gas Commission, Talisman Energy Inc., Canadian Natural Resources Ltd. and Driving Force, a Western Canadian vehicle leasing and rental firm.

"We know in northeast B.C. that things are going to get very busy for us," Montana Currie, Driving Force's branch manager in Fort St. John, said in her office in a new \$5-million building. Her clients include Progress Energy, Shell, Encana Corp. and Nexen Inc., which was acquired in late 2012 by CNOOC Ltd. of China. "Fort St. John is very positive, and it's positive energy that gets things done."

As the region grows quickly, there's a learning curve for newcomers. Ms. Currie offers a friendly reminder to visiting workers to watch their fuel gauge because some invariably run out of gasoline driving out to remote locations where there aren't pumping stations.

The North Peace Regional Airport increased the number of parking spots by one-third to more than 320 last summer and doubled the number of car rental spots to 120. Already, the expansion has proven too little to meet surging demand.

WestJet Airlines Ltd. launched its regional Encore service between Fort St. John and Vancouver in June, while Air Canada beefed up its flight offerings on the route. The airport is forecast to handle more than 200,000 passengers in 2014, up from an estimated 144,000 in 2013 and 121,000 in 2010.

"People will be cramped in the terminal building," says Moira Green, the airport's managing director. She notes there is only one baggage carousel, but she hopes to eventually add two more.

The population of the Fort St. John region is forecast to nearly double to 123,000 within six years, even if only one or two LNG proposals come to fruition and if other developments proceed, notably coal mining ventures and BC Hydro's proposed \$8-billion Site C Dam. Thousands of construction jobs would be created, although Ms. Green sounds a cautionary note. "We don't like the boom word. It has a corollary in bust," she says.

The energy sector needs workers, but they must have the right skills and be prepared for tough conditions, says Jennifer Moore of the North Peace Economic Development Commission. "It takes more than two feet and a heart beat to land a job," she says.

"It's winter here for a long portion of the year. You need your steel-toed boots and coveralls. You also need to know that you can survive when it's minus 40 out there. Work doesn't stop because it's minus 40," Ms. Moore said as she drove along the Alaska Highway in her pickup truck. "Make sure you've done your research before you come here for a job."

The road between Fort St. John and Dawson Creek, a city popular with summer tourists for its Mile Zero Post to mark the start of the Alaska Highway, is a busy link year-round as convoys of heavy-duty trucks carry equipment to and from drilling sites in the Peace River region.

While drilling activity dates back to the 1950s in Fort St. John and parts north, the fast pace of energy development is relatively new to Dawson Creek and parts south. Shell and other producers have been venturing into territory previously dominated by cows instead of rigs. Setting up drilling sites sometimes

requires careful timing so as to keep the peace with local ranchers. There could be dozens of trucks on a road headed toward a drilling site, but if cows stand in the way, then commerce grinds to a halt.

Richelle Cooper, 22, grew up on a ranch near Dawson Creek, but she sees the energy industry as the economic catalyst for the region.

A decade ago, there weren't nearly as many job opportunities for youth as there are today, and it was common for local high-school graduates to leave in droves to Vancouver, Edmonton, Calgary and other cities, she said after finishing a 12-hour shift as an administrator and labourer for Infinity Oilfield Services.

"Natural gas development is creating jobs, and people are realizing that now," she says.

After completing the nursing program at Northern Lights College in Dawson Creek, Ms. Cooper could only find part-time work as a nurse, so she jumped at the chance when a full-time opening arose at Infinity in late 2012. She already makes \$22.50 an hour, but with some more training and experience, she is optimistic about landing a field job that pays \$35 an hour and developing a fulfilling career.

### **A bounty of gas**

China, Japan, South Korea and Malaysia are among the Asian energy buyers that are eyeing northeastern B.C. gas, notably the Montney formation. The Liard, Horn River and Cordova plays also boast significant gas reserves.

The Montney is much larger than the Marcellus gas formation in the U.S. Northeast, notes TD Securities Inc. analyst Mike Dembicki. He estimates Montney to be the third-largest hydrocarbon resource in North America, trailing only Alberta's oil sands and the Permian oil and gas basin in Texas and New Mexico.

Shell leads the LNG Canada project, which is proposing to build an export terminal at Kitimat, one of the leading contenders in the race to export LNG from northwestern British Columbia.

Another major player is Malaysia's state-owned Petronas, which leads the Pacific NorthWest LNG proposal to build an export terminal at Prince Rupert. In 2012, Petronas acquired Progress Energy Canada Corp., whose key assets are natural gas properties in northeastern British Columbia.

"Our natural gas markets are being eroded in the U.S. and Eastern Canada. We're going to have to find new markets in Asia," says Progress chief executive officer Michael Culbert.

Enormous capital investments are required to bring LNG projects on stream. "This isn't what junior Canadian companies do. This is what multinational companies do because the capital is so intense," Mr. Culbert says. "We're identifying and validating the reserves that will serve 20-year to 30-year LNG contracts."

Progress recently had 27 rigs in northeastern British Columbia, making it the most active company in the region. Pacific NorthWest LNG estimates that almost \$36-billion will need to be spent in order to make its export plan a reality by early 2019. It's aiming to make its final investment decision by the end of 2014, while Shell-led LNG Canada is targeting a "mid-decade" deadline for its decision.

Most of the 567 wells drilled by all companies across British Columbia last year were for natural gas. B.C. drilling activity last year increased 24 per cent from 2012. Experts forecast an even busier 2014. Until it can export gas, however, B.C. is adding to a domestic market already well supplied.

### **The provincial payoff**

B.C. Premier Christy Clark believes that if five LNG projects come to fruition, the economic benefits will include 39,000 construction jobs and a further 75,000 jobs created for operating LNG plants and pipelines. The B.C. government envisages a total of \$1-trillion being added over three decades to the province's gross domestic product.

Ms. Clark has a long-term vision modelled after the \$16.7-billion Alberta Heritage Savings Trust Fund. She wants to create the British Columbia Prosperity Fund, which would become an enormous piggy bank to collect LNG tax revenue. An LNG tax regime is slated to be unveiled in the province's budget on Feb. 18.

The Premier's optimism helped the B.C. Liberal Party score a surprising re-election victory last May. But critics deride her LNG vision as a pipe dream, questioning whether even one project will get off the ground and saying it is unrealistic that she has set a goal to dramatically slash the province's \$62-billion debt with proceeds from LNG tax revenue.

Major hurdles need to be cleared for northeastern B.C. natural gas to reach its potential, especially as LNG projects try to stick with timelines, face competitive threats, and address environmental issues and First Nations' concerns.

Wood Mackenzie, the global energy consultancy, says consolidation is inevitable to corral costs. A project led by British-based BG Group PLC, for instance, has held talks with Petronas to build a shared natural gas pipeline in British Columbia, instead of constructing two competing lines.

There are also lingering concerns about hydraulic fracturing, or fracking, especially the huge quantities of water that are mixed with chemicals and then pumped into the ground. Geoscience BC, a not-for-profit organization, plans to step up its scientific studies of water supply and quality related to fracking in northeastern British Columbia.

In a letter to Ms. Clark earlier this month, Chief Karen Ogen of the Wet'suwet'en First Nation says the B.C. government has a duty to consult with aboriginals "for the exploitation of resources, including when, by whom and how."

Ellis Ross, chief councillor of the Haisla First Nation near Kitimat, supports LNG development in principle, but cautions that natural gas drilling and LNG terminals must meet or exceed environmental provincial and federal standards. The amount of money being contemplated for natural gas and LNG investment is staggering, Mr. Ross says, noting that he has gone from budgeting \$100,000 for a new service station for cars in his village to scrutinizing how the Haisla might receive spinoff benefits from multibillion-dollar LNG projects.

While B.C. LNG projects must find ways to overcome obstacles, the provincial energy regulator is gearing up for busy times ahead.

"When somebody makes a financial decision, a final investment decision, on an LNG plant and gas pipeline, we anticipate an increase in activity in the northeast," says Paul Jeakins, commissioner of the B.C. Oil and Gas Commission.

When Mr. Jeakins started his job as commissioner in 2006, he had 120 people on staff. Now, there are more than 210, and the workload promises to increase.

Eight years ago, unconventional shale gas plays were in their infancy in northeastern British Columbia, but improved technology has made natural gas buried deep beneath the surface economically viable, despite being trapped in tight spaces in what appear to be solid rock to the human eye. "That's the thing about shale. It's like this table. You can barely get your thumbnail into it. It's not porous like some of the old conventional pools that we used to have. The only way to get it out is by fracturing it," Mr. Jeakins says.

At Shell's Groundbirch project, the company has nearly 300 workers and another 200 people on contract, such as those employed by Nabors Industries Ltd., a leading provider of drilling and oil field services. Other contractors include Bonnett's Energy Corp. and Calfrac Well Services Ltd.

After initial drilling, rig workers use fracking. Multistage fracking has brought a manufacturing mindset to drilling sites in northeastern British Columbia, in contrast to conventional practises found at exploration and development operations.

The B.C. portion of the Montney play contains an estimated 271 trillion cubic feet of marketable natural gas and the Alberta side holds another 178 trillion cubic feet, according to a recent study by the National Energy Board and others. That amount of marketable natural gas is the equivalent of meeting nearly 160 years' worth of Canada's consumption, and new technology could increase reserve estimates in future.

Shell's Mr. Tetrault likens the northeastern B.C. gas play to harvesting a known resource. Today's fracking is far different than the old days of exploratory drilling. "You won't hear 'Whoa, we got it!' Here, you know where it is," Mr. Tetrault says.

It's that technology that has paved the way for B.C. to make its LNG dream real.

As Mr. Tetrault says: "The prize from this source rock is tremendous."