

# NATURAL GAS



## FUELING OUR FUTURE

**How this vital resource continues to generate employment opportunities** in our province despite uncertain economic times



HOW THIS RESOURCE PROVES TO BE VITAL TO OUR ECONOMY

**Fueling fleets**  
Why transportation industries benefit from options



**Cleaning up our act**  
What methods make natural gas more sustainable?



## CHALLENGES



FACT

1

THE NATURAL GAS SECTOR IS EXPECTED TO PROVIDE 317 000 JOBS ACROSS CANADA BY 2035

**FUELING OUR LIVES**  
It's easy for consumers to flip a switch and benefit from the comforts natural gas energy offers.

Natural gas is reliable and long recognized as a complement to B.C.'s hydro electric resources, and **is a flexible partner with other energy sources.**

## Energizing our economy

From the natural gas fields in the northeastern reaches of the province to the furnace or fireplace in your home, the importance of British Columbia's natural gas industry has re-established itself—driving the provincial economy, fueling employment and being recognized as a foundational fuel to be used in new ways in B.C. for decades to come.

With the promise of vast supplies, natural gas in B.C. is abundant and affordable, and has supplies expected to last at least 100 years at current demand levels.

Natural gas is reliable and long recognized as a complement to B.C.'s hydro electric resources, and is a flexible partner with other energy sources. It is particularly well-suited to work with intermittent renewable energies, like wind and solar.

**Cleaning up our act**

Natural gas is versatile and cleaner burning. With 20 to 30 percent lower GHG emissions than diesel-powered vehicles, it holds significant potential for B.C.'s transportation sector. Natural gas is also used in industrial applications, in the commercial and institutional sectors, as well as in homes across the province. As well, through

innovation, natural gas is now being delivered in the form of biogas or landfill gas to homes and businesses. Natural gas utilities today serve approximately one million British Columbians in more than 135 communities, meeting 21 percent of all B.C.'s energy needs.

Natural gas development is translating into significant benefits for British Columbians. Royalties from natural gas production in the province are fast becoming the B.C. government's most important source of natural resource revenue. In 2012-2013, the fiscal plan shows natural gas royalties will reach \$597 million, compared with \$534 million in revenues from forestry. In 2010, natural gas land sales contributed \$844 million to the province. In addition, there are significant revenues from property and corporate taxes from natural gas pipelines. In 2009 for example, transmission pipelines alone contributed a combined \$97 million in property and corporate taxes to all three levels of government.

The province uses these funds for healthcare, education and social services that are relied on by all British Columbians.

**Powering the economy**

Significant direct employment opportunities are another benefit from natural gas development. Last year, the

“Natural gas development is translating into significant benefits for British Columbians. Royalties from natural gas production in the province are fast becoming the B.C. government's most important source of natural resource revenue.”

industry provided 12,000 jobs, and it is estimated that by 2035, 40,000 people in B.C. will work in this sector, according to the Canadian Energy Research Institute.

Job growth will come from continued domestic use of natural gas and from expanding export markets. The province has already turned its attention to the potential for shipping natural gas offshore. Access to rapidly growing Asian markets through the export of liquefied natural gas (LNG) promises significant benefits to the province. State-of-the-art LNG export facilities and pipeline infrastructure in B.C. are key to realizing this opportunity. Such facilities also hold economic promise for the communities where they're being developed.

Natural gas plays a foundational role in B.C. today and offers even more promise for tomorrow. That is why we call natural gas tomorrow's energy today—for British Columbia, and indeed for all of Canada.

*On behalf of the Canadian Natural Gas Initiative.*

**DAVE COLLYER, PRESIDENT**

Canadian Association of Petroleum Producers

**BRENDA KENNY, PRESIDENT**

Canadian Energy Pipeline Association

**TIMOTHY EGAN, PRESIDENT**

Canadian Gas Association

## How a traditional resource is fueling the future

**Natural gas plays a massive role in finding more sustainable solutions to British Columbia's energy needs.**

But how much do you know about the role natural gas plays in your life?

“We like to turn a dial or flip on a switch and get heat or lighting but we often forget how it's getting here,” says Brent Gilmour, executive director of Quality Urban Energy Systems of Tomorrow (Quest), a network of energy, utility and community leaders geared towards developing energy solutions.

When it comes to developing integrated community energy systems, “natural gas has a strong story to tell,” says Gilmour.

As residential, commercial and industrial sectors look for more sustainable energy, the resource, found in abundance in the province's north, is becoming an increasingly economical option for heating and electricity needs.

“A lot of those systems start with natural gas,” says Gilmour. “It's a cost-effective type of fuel at this time but it can also be used with different types of renewable fuels.”

With the pre-existing infrastructure, natural gas has become a cheaper option for homes and businesses when compared to other fossil fuels.

According to the B.C. government,



“We like to turn a dial or flip on a switch to get heat or lighting, but we often forget how it's getting there.”

**Brent Gilmour**  
Executive Director,  
Quality Urban Energy Systems of Tomorrow

over the next two decades energy consumption is expected to increase 25 to 45 percent.

“It's about using the right type of fuel, at the right time for the right situation,” says Gilmour.

**The road to self sufficiency?**

As part of B.C.'s legislation, the province plans to be self-sufficient electricity-wise by 2016 with 90 percent of that energy coming from clean, renewable resources.

As one of the cleanest burning fossil fuels—natural gas based electricity generation releases 50 percent less greenhouse gas emissions than coal—natural gas could help to contribute to these goals.

According to the B.C. government, in 2008, natural gas accounted for 25.5 percent of the province's energy needs.

“Sixty percent of most energy is used

for space heating and electricity,” he says, adding that the key to more efficient systems is “actually utilizing that energy multiple times.”

When it comes to the logistics side of things, Gilmour says that most cities have access to natural gas.

“Most of the largest natural gas distribution companies are a part of urban energy systems.”

David Bennett, director of resource planning and market development for energy company FortisBC, says natural gas is quite “versatile.”

“Since launching the renewable natural gas program this past June, we have helped save up to 500 tonnes of greenhouse gases—equal to removing about 100 cars from the road or keeping about 400,000 pounds of waste out of landfills each year,” says Bennett. “Renewable natural gas is an innovative energy solution.”

**On the go**

The transportation and waste markets have also tapped into natural gas as a source of fuel.

“New markets are also emerging for natural gas, such as natural gas vehicles and renewable natural gas, which comes from sources such as landfills and agricultural waste,” says Bennett.

In Metro Vancouver, Translink operates a fleet of 75 natural gas buses and the province also offers \$1,000 social service tax exemption for light duty natural gas vehicles and a \$10,000 social service tax exemption for natural gas vehicles.

“(Natural gas powered trucks) provide a way to decrease lifecycle carbon emissions, reduce noise levels, and lower the cost of fuel for fleet operators,” says Bennett.

He adds that he's confident natural gas will play a large role in B.C.'s future. “As we continue to develop and implement new ways to use natural gas as an energy source, our sights are firmly set on a future where B.C. is positioned to meet its environmental and energy goals.”

**ANDREW SEALE**

editorial@mediaplanet.com



## WE RECOMMEND



**Fueling stability**  
Why increased foreign focus is strengthening B.C.'s job market.

PAGE 4

“We've got 10 to 20 world class companies doing business here. There's not a lot of the community that hasn't grown because of this...”

**Impact by sector**  
Our expert panel weighs in. **p. 6**

**What is fracking?**  
The measures taken to ensure transparency and environmental sustainability **p. 7**

**MEDIA  
PLANET**

NATURAL GAS  
1ST EDITION, OCTOBER 2011

Responsible for this issue:  
**Publisher:** Ash MacLeod  
ash.macleod@mediaplanet.com  
**Designers:** Penelope Graham  
penelope.graham@mediaplanet.com  
Missy Kayko  
missy.kayko@mediaplanet.com  
**Contributors:** Dave Collyer, Timothy Egan,  
Brenda Kenny, Andrew Seale  
**Managing Director:** Joshua Nagel  
joshua.nagel@mediaplanet.com  
**Business Developer:** Mark N. Rybchuk  
mark.rybchuk@mediaplanet.com

**Photo Credit:** All images are from iStock.com unless otherwise accredited.

**Distributed within:**  
Vancouver Sun, October 2011  
This section was created by Mediaplanet and did not involve The Vancouver Sun or its Editorial Departments.



FOLLOW US ON FACEBOOK AND TWITTER!  
[www.facebook.com/MediaplanetCA](http://www.facebook.com/MediaplanetCA)  
[www.twitter.com/MediaplanetCA](http://www.twitter.com/MediaplanetCA)

Mediaplanet's business is to create new customers for our advertisers by providing readers with high-quality editorial content that motivates them to act.

## DID YOU KNOW

**The recipe for nature's fuel**

**1** Natural Gas is a naturally occurring hydrocarbon consisting primarily of methane, but it may also contain small amounts of ethane, propane, butane and pentanes. As natural gas flows out of the ground it may also contain sulphur compounds, nitrogen, carbon dioxide, water and other substances. These compounds are removed from the natural gas at processing plants.

— Courtesy of Canadian Association of Petroleum Producers

# INSPIRATION

ON SITE

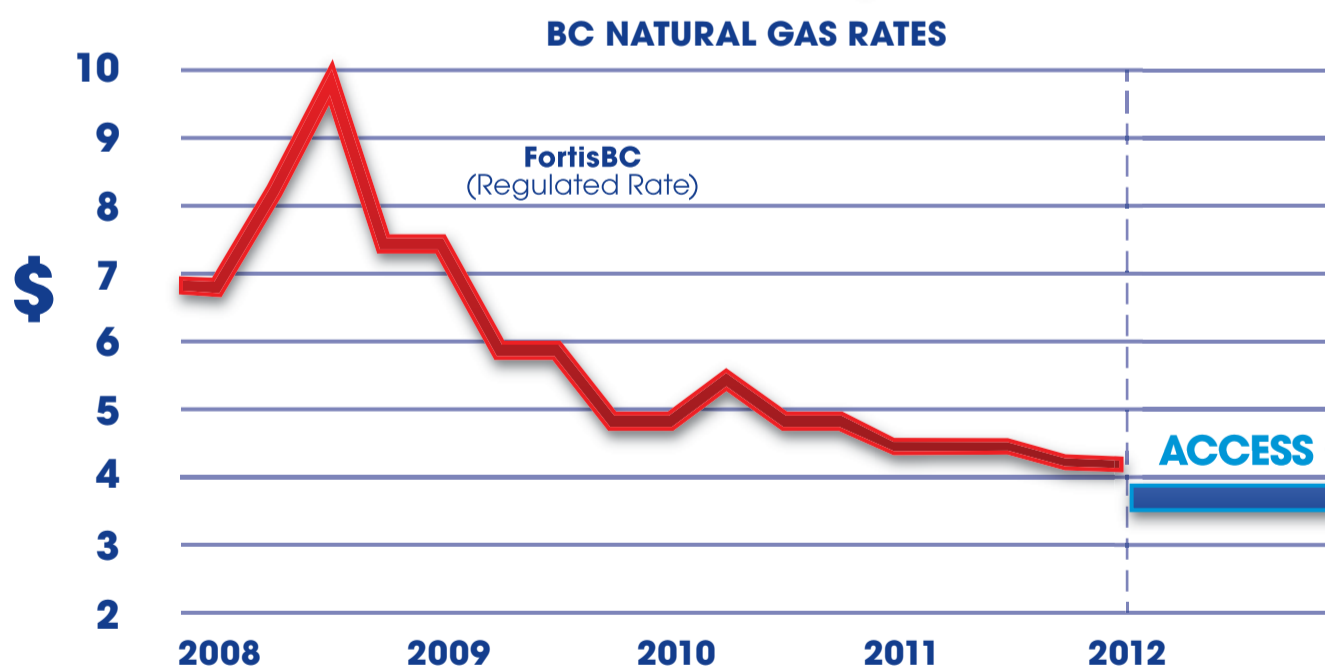


## The pipe lineup

Operations at Nexen's Dilly Creek shale gas operations, located by Horn River, B.C.

PHOTO: NEXEN INC.

# BUY LOW ↘ ↗ NOT HIGH



**CUSTOMER CHOICE**  
Natural gas pricing. Your say. Your way.

Rates Starting From:  
**\$3.89**

Enrollment is Free  
Continue to receive only one bill from FortisBC  
Save as much as 60% off expiring fixed rate contracts

INDUSTRIAL

COMMERCIAL

RESIDENTIAL



Enroll online or visit us at:  
[www.accessgas.com](http://www.accessgas.com)

Or call toll free:  
**1-877-519-0862**

Or E-mail:  
[info@accessgas.com](mailto:info@accessgas.com)



Offer only available to FortisBC Energy Inc. ("FortisBC") customers eligible to enroll in the CUSTOMER CHOICE program for December 1, 2011 gas flow. Please refer to the relevant agreement for the full terms and conditions of any offer. The natural gas rates offered by Access Gas Services Inc. ("Access Gas" or "we") are subject to change without notice and do change frequently to ensure we are always offering the best possible prices. Access Gas is an independent natural gas marketer that is not related to FortisBC. During the term of any agreement, the pricing alternatives we offer could end up being greater or less than the FortisBC regulated rate. To the knowledge of Access Gas, information from third-party sources is accurate. For more information on the CUSTOMER CHOICE program or to download a copy of the Standard Information Booklet please visit [www.fortisbc.com](http://www.fortisbc.com) or contact Access Gas at #1-730 Eaton Way, Delta, BC, V3M 6J9, Phone: 604-519-0862, Fax: 604-519-0873, E-mail: [info@accessgas.com](mailto:info@accessgas.com).

## INSPIRATION

Natural gas' contribution to British Columbia's economy is hardly a new concept. **With an increasingly sharp foreign focus on the commodity, however, it continues to fuel the province's labour market as well.**

# Fueling stability and a job renaissance in B.C.

## HOW WE MADE IT

**Natural gas is by no means a new discovery in B.C. but increased interest from Asian markets and innovative methods for extracting and liquefying the gas have given the province a reason to be bullish about the resource.**

Along with generating employment, this vital resource continues to prove to be a pillar of economic stability in B.C.

Rich Coleman, B.C.'s Minister of Energy and Mines says the sheer volume of shale gas reserves in the province's northeast are becoming more accessible as new drilling technology progresses.

"10 or 15 years ago we looked at natural gas as a finite resource," says Coleman. "We now have a resource that will last 150 years."

And with the reserves, come an increasing amount of jobs for a region that took quite a hit with the decline of the forestry market.

"The whole northeast and northwest of our province is about to have a job renaissance," says Coleman.

But it's not just the north of the province that will reap the rewards; the trick-

le down effect to B.C.'s economy is an important source of revenue.

### Getting creative

According to the Ministry of Energy and Mines, in 2011 the oil and gas sector generated about \$1.33 billion in revenue to the Crown. This represents 49 percent of total revenue generated by the resource sector in B.C. and about 3.3 percent of total government revenues.

"We get about a seven to one payback," says Coleman. "So it's really good to our taxpayers."

At the moment, the Horn River Basin holds the most extensive shale gas reserves in the province but it's location in the northeast means pipelines must be used to get the gas to the ports on the northwest and southern markets.

The development of a plant at Kitimat to liquefy the natural gas for export to Asia, gives the province a leap on the competition.

"We've got to make sure B.C. stays an attractive place to invest in," says Coleman. "(To do that) we need to be creative."

Developing infrastructure in the north—from roads to power projects for the industry—will continue to create diversified

According to the Ministry of Energy and Mines, in 2011 the oil and gas sector generated about \$1.33 billion in revenue...



**A WIDE REACHING IMPACT**  
The town of Taylor, located in the Peace River region, is one of B.C.'s many boom towns.  
PHOTO: NORTH PEACE ECONOMIC DEVELOPMENT COMMISSION

jobs as well as increase interest from other industries in an area ready to meet demands.

### Jobs, jobs, everywhere

Bill Streeper, mayor of Fort Nelson B.C.—located in the Horn River Basin—says he's watched the region "change dramatically."

"We're up into the trillions of cubic feet of natural gas reserves here," says Streeper. "We could be probably one of the largest natural gas suppliers in the world."

He says that although there's plenty of employment, people often don't know the scope of available work.

"People fail to realize that the gas industry is very sophisticated," says Streeper. "When you look at the jobs, it's not stan-

ding up to your knees in mud—there are many interesting jobs."

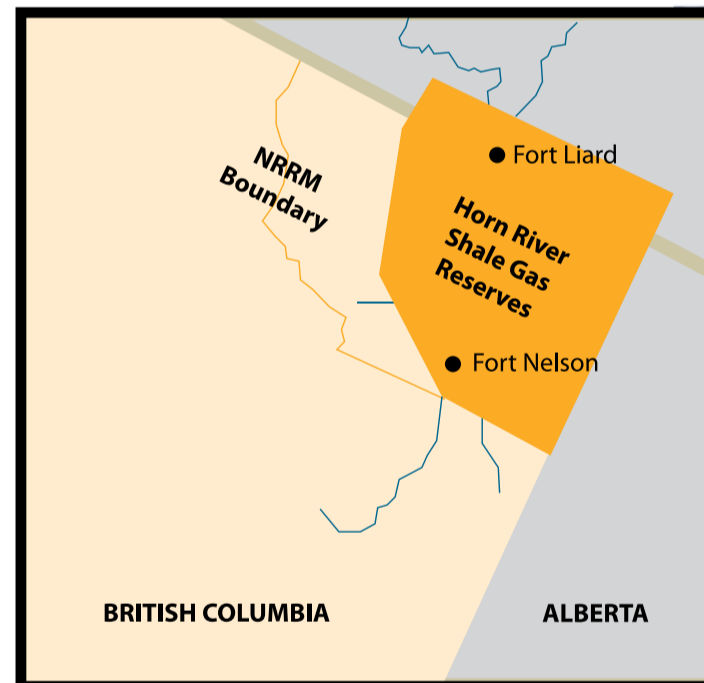
Laurie Dolan, executive director of Energy Services B.C.—a not-for-profit that represents the province's oil and gas sector—points out that it's not just within the industry that has benefitted employment-wise.

"We've got 10 to 20 world class companies doing business here," says Dolan. "There's not a lot of the community that hasn't grown because of this—the hotels are filled the restaurants are at capacity."

She says that although the natural gas industry is booming people in B.C. "don't even know where we are."

"If anybody needs a job—tell them to come on up."

ANDREW SEALE



## Fort Nelson: Heart of the Horn River Basin

The regional service centre for the Northern Rockies & the Horn River, Liard, and Cordova Basins, Fort Nelson is characterized by an abundance of natural resources: lush mixed forests, exciting natural gas development, an emerging agricultural sector, and a tourism sector anchored by the Alaska Highway.

**Fort Nelson's Oil and Gas Service Sector is Ready for Business!**

Contact us for more information (250) 774-2541 | [ecdev@northernrockies.ca](mailto:ecdev@northernrockies.ca) [www.NorthernRockies.ca](http://www.NorthernRockies.ca)



## NORTH PEACE

Explore the Opportunities...

Explorers, fur traders and then homesteaders joined the First Nations here and settled the vast northeastern region of British Columbia with dreams of freedom and a better life. These same dreams continue to attract people to the North Peace region. Now, instead of hardship, newcomers find contemporary community facilities and remarkable job and business opportunities.

### North Peace Advantages:

- Strong Vibrant Industries:
  - Agriculture: Produces 90% of the province's grain
  - Oil and Gas: Over 10,000 wells drilled and projects with lives of 50 years or more
  - Tourism: Plays host to over 300,000 visitors each year
  - Forestry: Employs about 2,300 forestry workers
  - Trucking: One of most common job searches is class 1 drivers
  - Retail and Construction: A demand for over 100 units in the North Peace region in the next 2 years
  - Low cost hydroelectric power
  - Need for skilled tradespeople and professionals
  - Affordable housing
  - Sports and cultural amenities
  - College, university & training institutions
  - Regional health and medical services



### This place gets in your blood...

I am originally from Sylvan Lake, but relocated to Fort St. John for a position with a mechanical service company. My time here has been filled with challenges and successes, but it's the relationships within community that have made the difference. The city is full of young competent individuals that have like-minded goals for success and a better quality of life. The opportunities for professional and personal development here are magnified by the experiences that come with living in the region. Most people I know all have a Fort St. John story about how they came here to serve a short term goal, and have never left. This place gets in your blood, I am a lifer.

— Cam Carmichael, Technical Sales

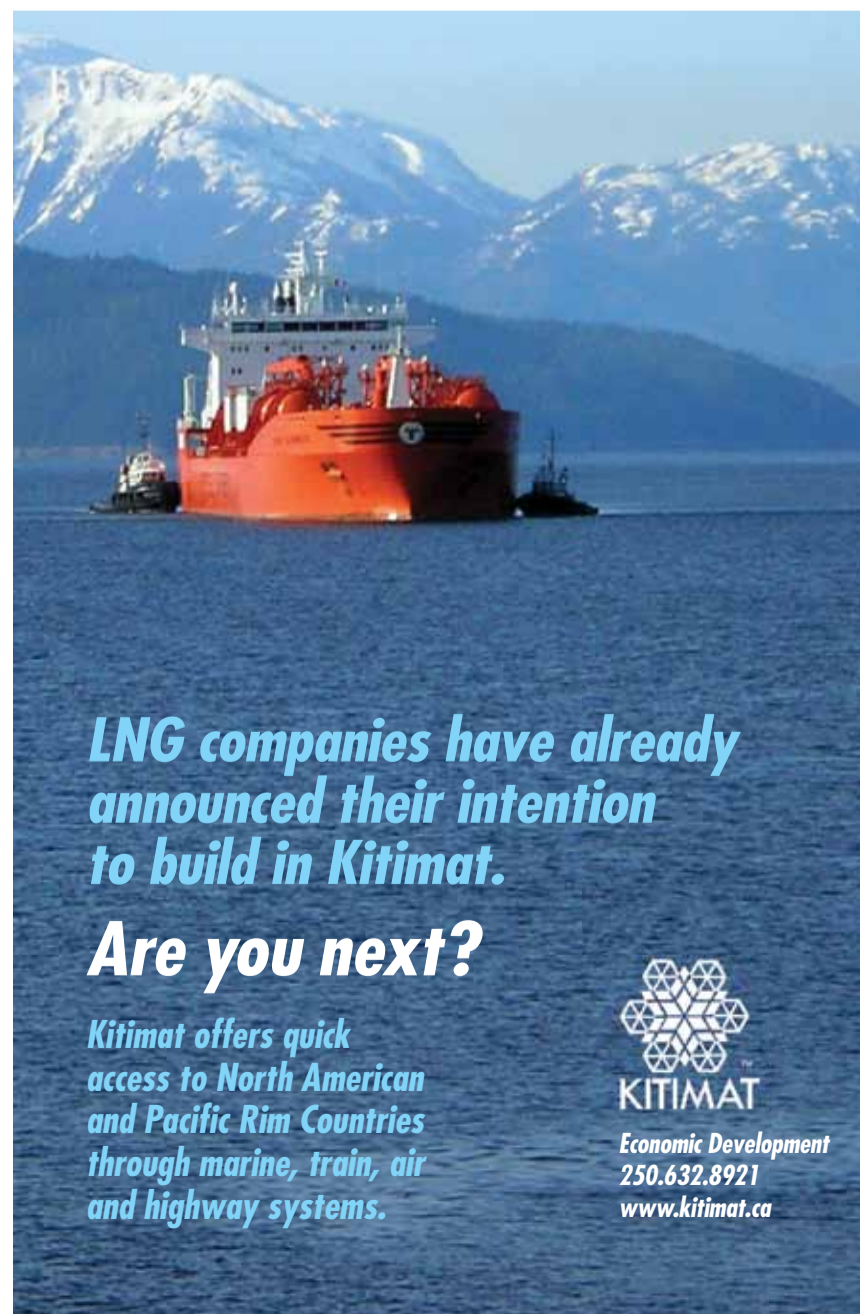


North Peace Economic Development Commission  
(250) 785-5969  
[www.npedc.ca](http://www.npedc.ca)

City of Fort St. John  
(250) 787-8150  
[www.fortstjohn.ca](http://www.fortstjohn.ca)

District of Taylor  
(250) 789-3332  
[www.districtoftaylor.com](http://www.districtoftaylor.com)

District of Hudson's Hope  
(250) 783-8901  
[www.hudsonhope.ca](http://www.hudsonhope.ca)



**LNG companies have already announced their intention to build in Kitimat.**

**Are you next?**

Kitimat offers quick access to North American and Pacific Rim Countries through marine, train, air and highway systems.



KITIMAT

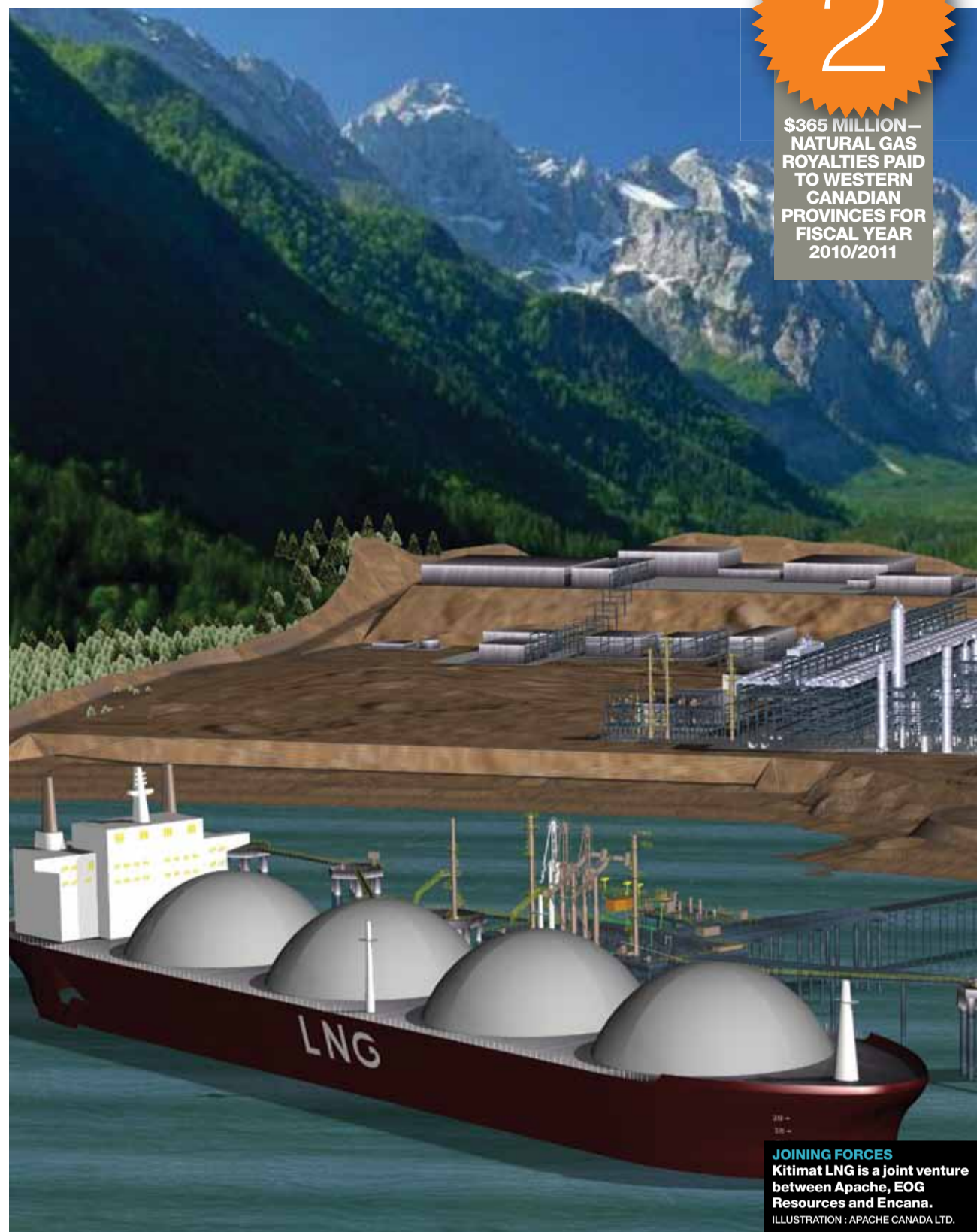
Economic Development  
250.632.8921  
[www.kitimat.ca](http://www.kitimat.ca)

INSPIRATION

FACT

2

\$365 MILLION—  
NATURAL GAS  
ROYALTIES PAID  
TO WESTERN  
CANADIAN  
PROVINCES FOR  
FISCAL YEAR  
2010/2011



**JOINING FORCES**  
Kitimat LNG is a joint venture  
between Apache, EOG  
Resources and Encana.  
ILLUSTRATION: APACHE CANADA LTD.



NEWS IN BRIEF

Go West for Eastern access

**Why export of natural gas to Asia is bolstering B.C.'s economy.**

In mid-October, Canada's National Energy Board flipped the green light for the country's first export of liquefied natural gas, by granting a 20-year export license to the proposed Kitimat LNG project.

The project at the centre—Kitimat LNG, located on B.C.'s Pacific coast—is a joint venture between Apache, EOG Resources and Encana, which hold 40, 30 and 30 percent respectively.

"Demand for B.C.'s natural gas continues to increase, especially in Asia," notes B.C. Premier Christy Clark. "The establishment of an LNG port at Kitimat on the west coast will give B.C. even greater access to the Asian market. B.C. has the shortest shipping time to Asian markets."

Kitimat is the closest of the BC ports and aptly suited to act as a gateway for natural gas to the East.

Apache spokesperson Paul Wyke says the project is expected to contribute the equivalent of 1,500 employment years of construction work during development and about 130 direct, permanent jobs once the terminal is in operation.

The export of natural gas to Asia, via the terminal, will bolster an economy on the upswing after several years of drought in the forestry market.

"(It also) represents a remarkable opportunity for Canadian natural gas pro-

ducers to serve the ever-growing Asia-Pacific market and to open up international markets to a vast Canadian resource supply," says Wyke.

In 2008, net export revenue of natural gas totalled \$28 billion, making it the second largest contributor to Canada's energy trade surplus.

"The U.S., Canada's only existing export market, is enjoying a gas boom of its own and will require less and less Canadian natural gas in the future. We need to develop new markets for this vast resource and the Asia-Pacific region is where we need to focus," says Wyke.

The Asian market tends to pay higher for natural gas than the North American market making it an important source of revenue for the province.

The awarding of the 20-year export license is the last major regulatory hurdle in the development of Kitimat LNG. Although a final investment decision on the project isn't anticipated until 2012. The project will be served by the Pacific Trail Pipelines (PTP), which will run from Summit Lake to Kitimat.

"The 463-kilometre underground line will provide the terminal with a direct connection and excellent access to natural gas supplies in British Columbia," adds Wyke.

This sets the tone for future exports from Kitimat.

ANDREWSEALE

editorial@mediaplanet.com

Delivering B.C.'s natural gas to market

In turn, natural gas brings home important economic and employment benefits.



www.alliancepipeline.com

Tapping into B.C.'s natural gas. This is the time and place.

It's time to deliver. To deliver on the tremendous potential of B.C. natural gas. Potential which will create jobs, drive economic growth and enhance Canada's global standing.

British Columbia is the key to unlocking Canada's economic future: a vibrant gateway to high-growth markets with growing appetites for reliable, responsibly developed and delivered energy.

And Spectra Energy is ideally positioned to be the pipeline partner of choice to connect B.C.'s growing supply to virtually any West Coast liquefied natural gas facility.

Spectra Energy is a North American energy leader – leading in safety, customer responsiveness, stakeholder engagement and environmental stewardship.

spectraenergy.com

Innovate...Invest...Deliver.



# PANEL OF EXPERTS



**Doug Stout**  
Vice President, Energy  
Solutions & External Relations,  
FortisBC



**Doug Bloom**  
President  
Spectra Energy  
Transmission West



**Richard Dunn**  
Vice-President, Regulatory &  
Government Relations,  
Encana



## Question 1:

How is your Sector (Stream) impacting B.C.'s Economy and Employment?

**Natural gas plays a key role** in B.C.'s economy, representing about 22 per cent of the energy consumed in B.C., more than electricity. Compared to other fuels, natural gas can be more economical and is used in a variety of ways - from home heating to industrial processes.

We invest in significant energy infrastructure projects that drive economic benefits and jobs to communities across B.C. For example, our recently completed liquefied natural gas storage facility on Vancouver Island drove \$70 million into the local economy over the course of the project.

**It's important to recognize** the significant positive correlation between increased natural gas demand and industry investments across this province. A prime example is Spectra Energy's current capital expansion program in which we are investing \$1.5 billion in B.C.'s natural gas infrastructure. In addition to employing more than 850 British Columbians, we are creating an incremental 1,350 construction and construction-related jobs, totaling approximately two million person-hours of work. We pay approximately \$61.5 million in property taxes and \$33 million in carbon taxes annually—funds that are essential to maintaining the critical social programs upon which we all rely.

**B.C. is blessed** tremendous natural gas resources. Developing these resources provides a source of direct revenue to the province through royalties and taxes - supporting such things as education and healthcare services - and is a source of income to the many people working in the natural gas industry. For example, Encana alone has invested more than \$1 billion a year on average into Northeast B.C. natural gas development over the last 10 years, providing good paying jobs for British Columbians.

## Question 2:

What does environmental sustainability mean to your sector?

**As demand for energy grows**, our customers' energy needs must be met in an environmentally sustainable way. Our energy solutions - conventional gas, natural gas-powered vehicles, district energy systems, renewable natural gas, or energy conservation programs - are designed with this in mind.

Before commencing work on large infrastructure projects, we undertake environmental assessments to minimize and mitigate our impact. We undertake activities to support sustainability and environmental protection, while helping customers reduce their carbon emissions and get the most out of their energy dollar through conservation.

**To us it means** setting and achieving high standards, and continuously improving our own environmental performance. At its simplest, our role is to expand infrastructure to facilitate the use of natural gas as a source of cleaner-burning energy. We take a comprehensive full life-cycle approach to project development, from identifying sensitive areas and biodiversity issues to minimizing our environmental footprint. We champion energy efficiency and emissions reductions in our own operations, invest in new technologies and provide innovative energy services, such as carbon capture and storage and waste heat recovery. We're also advocates of gas-fired electricity generation as an opportunity of growing importance.

**It means working hard** to develop natural gas responsibly. We need to continue to strive to reduce emissions intensity, and responsibly source, handle and dispose of water. Industry's environmental responsibilities can be seen in the "Guiding Principles for Hydraulic Fracturing" announced in September by the Canadian Association of Petroleum Producers. Encana supported the development of these principles and our participation demonstrates our commitment to responsible water use.

## Question 3:

What challenges does your stream face moving forward?

**We are developing new ways** for natural gas to be used more broadly in B.C., and need to ensure our customers are aware of the economic and environmental advantages of these new energy options - natural gas vehicles and district energy systems are only the beginning. Going forward we must work closely with our industry peers, policymakers, and stakeholders to ensure a level playing field in the energy industry and that consumers have access to the tools and resources required to make informed choices about their energy use.

**Our massive natural gas** reserves in northeast British Columbia, though plentiful, could be shut in without swift action that would also shut in jobs and economic activity. We must address the modernization of Canada's outdated system for large project approvals with the end goal of a "one project, one review" regime. Only by establishing a modern energy-related regulatory process of linked or integrated legislation that ends overlap and duplication (both provincial and federal), will we support energy development, innovation and attract investment in this increasingly competitive global marketplace.

**B.C. has lots of opportunity** but we're developing a resource located in relatively remote areas of the province. And we're currently in an oversupplied North American market. So projects that boost demand and grow markets are important to the B.C. natural gas industry—such as the Kitimat LNG project, in which we're a partner. From a social perspective, we know the public has questions about natural gas development. We encourage open, transparent, fact-based discussions. We are continuing to build public understanding, including where we have challenges. We will continue to adopt new technology and best practices to continue to improve performance.



# "Natural gas is a key part of the energy mix for our development."

**Ron Toigo**  
Developer, Tsawwassen Springs  
Managing Director, Shato Holdings

Developers looking for the right energy mix to fit the scope of their project often begin with natural gas. That's because homeowners demand it for the comfort, convenience, energy efficiency and lifestyle appeal. Business owners too, appreciate natural gas for the energy savings and positive contribution to their bottom line.

So before you start your next project, call your local FortisBC energy solutions manager about building natural gas into your plans.

Visit [fortisbc.com/energyteam](http://fortisbc.com/energyteam).

FortisBC Energy Inc., FortisBC Energy (Vancouver Island) Inc. and FortisBC Energy (Whistler) Inc. do business as FortisBC. The companies are indirect, wholly owned subsidiaries of Fortis Inc. FortisBC uses the FortisBC name and logo under license from Fortis Inc. (11-515 10/2011)

NEWS

FACT  
3

IN 2009, 14.7 B M3 OF SURFACE WATER WAS COLLECTED FOR USE IN BRITISH COLUMBIA, EXCLUDING HYDRO POWER



**TRAIL BLAZERS**  
The Debolt Water Treatment project, located at the Horn River Basin, is the recipient of The 2011 Responsible Canadian Energy Award for Environmental Performance.  
PHOTO: APACHE CANADA LTD.



QUESTION & ANSWER



**Steve Dunk**  
Manager of B.C. Operations for the Canadian Association of Petroleum Producers

The implications of working with water

**In what ways does working within the confines of the guidelines set out by CAPP for hydraulic fracturing benefit the companies?**

We've been using hydraulic fracturing as a technique to improve gas and oil production for decades. We've done 160,000 in Alberta and 20,000 in B.C. - so we've done a lot of this type of work. We already have regulatory guidelines. However putting these in, it really helps us with the public. The support of the people who live in the regions we work and the regions we operate is a key part of our ability to operate. Showing these principals and showing the public we apply these principals really contributes to improving relationships with those folks.

**What role does responsible water use play in establishing a transparent and environmentally conscious natural gas industry?**

If you look at water, the main concerns out there are: where is industry getting our water from so in other words do we have a sustainable supply and how are we protecting our water resources in so far as our well construction and protecting ground water. We talk about the goal of reducing our effect on the environment, using fresh water source alternatives. We've been using saline and recycled water sources. We're communicating technologies, sharing best practices. That helps the transparency. As far as environmental consciousness, we hope that we're answering some of the questions folks are asking.

"We talk about the goal of reducing our effect on the environment, using fresh water source alternatives. We've been using saline and recycled water sources. We're communicating technologies, sharing best practices."

ANDREW SEALE  
editorial@mediaplanet.com

# The innovations of hydraulic fracturing?

**Question:** How can you take a more sustainable approach to developing natural gas?

**Answer:** Through the monitoring and classification of chemical use, methods such as "fracking" don't have to be environmentally hazardous.

**As the quest for less carbon-intensive alternatives to petroleum continues, British Columbia's north is witnessing an increase in natural gas activity.**

But with a greater appetite for natural gas from the region, comes a few environmental concerns.

B.C.'s Minister of Energy and Mines, Rich Coleman says the key to natural gas exploration in a sustainable way is transparency.

"You do get concerns about what's going down the hole," says Coleman, referring to the process of hydraulic fracturing or "fracking" which has garnered some controversy for its use of chemicals.

Fracking involves injecting large amounts of water, sand and chemicals at high pressures to fracture rock and release natural gas.

**Classifying chemical use**

But the ministry and industry have both decided to address those concerns by creating an updated registry of the chemicals used in hydrolic fracturing and

Coleman says he's confident B.C.'s natural gas industry is on the mark. The registry will be online in January 2012.

"The information (will be) out there and the public can look at it anytime," says Coleman adding that, "(the rest of) Canada could learn from these guys" and their practices.

**Cleaning up the act**

Premier Christy Clark also showed confidence that extraction can be done in a safe way, helping pave the way for a resource that could prove to be a major source of economic stability for the province.

"B.C. is a leader in safe and responsible natural gas development," says Clark. "The province has an abundant supply of natural gas, through shale, that can meet new and growing demands."

**Setting principles**

FACTS

**All about drilling**

**Rotary drill bits** with diamond teeth and hardened steel, attached to the end of a string of pipes, are used to drill through rock and into the gas deposit 1-5km deep.

**In the Horn River Basin**, some oil companies are using single drill pads with multiple wellheads on them in order to reduce the amount

The Canadian Association of Petroleum Producers has also established its own set of principles for companies using hydraulic fracturing.

The voluntary principles focus on disclosing chemicals and fracturing fluid additives as well as committing to responsible water use and development of new technologies to reduce the environmental risks.

Coleman says air quality is another chief concern.

"We have to work together with the industry on monitoring air quality and standards," says Coleman noting that the ministry plans on establishing standards within the next 30-60 days.

"In addition to that, the ministry (of health) is also going to do a study of the health concerns in the area to know if there are any health issues as a result of the industry," says

of environmental disturbance that single pad and wellheads traditionally create.

**In some cases**, water or compressed gas is pumped into the reservoir to stabilize pressure. Recently, this technique has been used with compressed CO<sub>2</sub>, which can capture and store CO<sub>2</sub> in the reservoir, reducing greenhouse gas emissions.

Coleman.

**Water concerns**

Water use and quality also present a logistics issue. Although most fracturing takes place thousands of feet below the water table, well below any fresh water aquifers, the amount of water required for hydraulic fracturing is an issue the industry is working to address.

A crowning achievement in the industry search for more sustainable water sources is the Debolt Water Treatment Plant located in B.C.'s Horn River Basin.

The treatment plant—a joint venture between Encana and Apache Canada formed in 2007—taps into the Debolt saline reservoir, a deep sub-surface, non-potable aquifer.

"It's replaced the use of fresh water in the 80-90 percent range," says Graham Carter, joint venture manager at Apache Canada and an engineer who helped bring the project to fruition. "This is the first feasible solution that's been developed in the Horn River basin."

Carter notes that the B.C. government is "very conscious of how much water can be used by whom."

ANDREW SEALE  
editorial@mediaplanet.com

## Is natural gas here to stay as an alternative fuel?

**Since the 1930's, both scientists and society alike have mused about the idea of natural gas as an alternative to petroleum.**

The industry has witnessed a few false starts over the years, but as popular support rises for the less carbon-intense fuel, the transportation sector is making moves of its own to tap into the growing market.

At the moment, transportation is the only sector of our economy that relies on a single energy source to meet 99 percent of its energy needs.

"Canadians would benefit from having a choice when it comes to transportation fuel—there is a lack of competition in the market," says Alicia Milner, president of the Canadian Natural Gas

Vehicle Alliance.

Milner's organization advocates the use of natural gas as a cleaner, more economical fuel.

She points to Natural Resource Canada's lifecycle emission model—GHGenius—which shows on a well-to-wheels basis, the use of natural gas can reduce carbon emissions by 20 to 25 percent.

"For a single highway tractor-trailer, this means about a 50 to 70 tonne annual reduction in carbon emissions," says Milner adding, "given that heavy diesel vehicles represent less than five percent of on-road vehicles in Canada, but emit nearly 30 percent of the carbon from on-road sources, there appears to be a role for an affordable, lower-emission fuel such as natural gas."

In order to reap the benefits of the natural gas industry - gas giant Encana has

chosen the "practice-what-you-preach" path, converting parts of its own operations to run off of natural gas.

As of September, the company had 128 of its vehicles, as well as 15 drilling rigs converted.

This month also marked the opening of the company's compressed natural gas (CNG) station in Strathmore, Alberta—the fifth of its kind by Encana in North America. The company also owns a station in Sierra, B.C.

David Hill, vice president of Encana's Natural Gas Economy division, says the key to the success of natural gas as a fuel is infrastructure.

"The ultimate goal here is to build up that infrastructure across North America," says Hill. "Where we're all headed is (building) more stations around metropolitan centres."

At the moment, commercial and urban services fleets are finding the most benefit in using the fuel.

FortisBC and Vedder Transport, have launched a private refuelling station in Abbotsford, B.C., to supply Vedder's 50 LNG-powered trucks.

"Return-to-base fleets are perfect for natural gas," says Hill.

Milner echoes Hill's opinion. "Certain types of fleets may also benefit from being able to refuel all vehicles simultaneously overnight using a time fill system," says Milner. "This provides a labour cost benefit as fleets such as garbage truck fleets do not need to have drivers queue up to refuel at the end of their shifts."

ANDREW SEALE  
editorial@mediaplanet.com

**How has the reception been from the industry with regard to the guidelines?**

The industry writes these guidelines through various CAPP committees. Before they're released industry has been very supportive of them. Since they've been released industries been very appreciative of them because it provides some facts about what we're doing which helps them in their operating areas and helps them with their interaction with the public.

ANDREW SEALE  
editorial@mediaplanet.com

## INSPIRATION



CHOICE IN THE INDUSTRY

## Making the cleaner choice

As support grows for increased use of less carbon-intensive fuels, the transportation industry finds itself at the heart of the transition. Studies have shown that using natural gas can cut carbon emissions from 25 to 30 percent.

PHOTO: NATURAL GAS VEHICLE ALLIANCE

## Canadian Natural Gas. Tomorrow's energy today.

It offers a cleaner ride to work and is found in energy-efficient buildings across the country. Natural gas is fuelling newer, cleaner ways of meeting our energy needs today and for the future. Canadian. Affordable. Ready now.

Discover the possibilities at [canadiannaturalgas.ca](http://canadiannaturalgas.ca)

Canadian Natural Gas 



This bus runs on natural gas and is operated by the Hamilton Street Railway Company in the City of Hamilton's Public Works Department.