

# COMMUNITY MATTERS

## About Nexen

Nexen (a CNOOC Limited company) is responsibly developing energy resources in some of the world's most significant basins including the UK North Sea, Western Canada, the United States and offshore West Africa. Our team operates under a clear set of value-based principles of excellence, personal accountability, integrity and social and environmental responsibility. It's about getting the job done, the right way.

## Operations Update

### 2015 Drilling and Completions Program

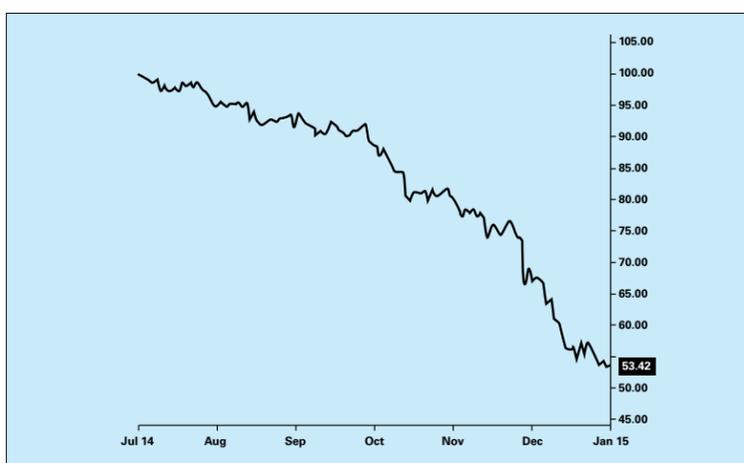
Shale gas development remains one of Nexen's key business priorities. To be a successful operator, we need to continually reassess our business needs and the economic climate, and make adjustments where necessary.

One of the factors in deciding to drill or develop resources is oil and natural gas prices. Currently, due to a surplus of oil and natural gas supply in North America and around the world, oil and natural gas prices have declined. This in turn impacts a company's cash flow – the total amount of money available after paying royalties and operating costs. Today, producers' cash flow has dramatically declined due to low oil prices. According to the Canadian Association of Petroleum Producers estimates, this has resulted in \$20-23 billion less spending in Western Canada in 2015 versus 2014.

When oil and natural gas prices drop, it becomes difficult to support a business case for development of dry natural gas properties like those found in the Horn River and Liard basins. Due to the decline of commodity prices, Nexen revised our 2015 drilling and completions program and budget to focus primarily on ensuring our current operations are performed in a safe and reliable manner while continuing to plan for future programs.

#### Reasons for decline in oil prices

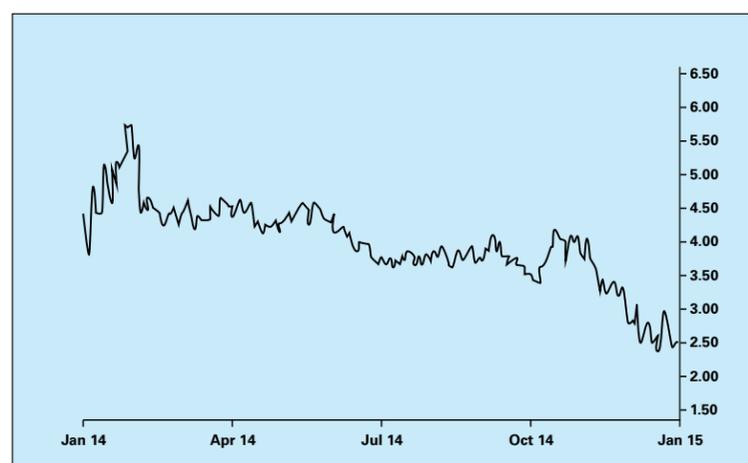
- Chart 1.1 depicts the sharp fall in oil prices over the past few months.
- Strong supply growth from U.S. shale oil development and weak growth in oil demand around the world has resulted in a significant fall in oil prices over the last few months.
- Weakness in Brent and West Texas Intermediate (WTI) oil pricing continues, now down over 56% and 50%, respectively from their highs.
- OPEC continues to remain on the sidelines waiting for a supply response from Non-OPEC producers.



**Chart 1.1:** Strong supply growth from U.S. shales and weak growth in oil demand has resulted in a significant fall in oil prices over the last few months. Source: Crude Oil WTI (NYMEX)

#### Reasons for decline in natural gas prices

- Chart 1.2 depicts the sharp fall in natural gas prices over the past 12-months.
- With the safe and cost-effective recovery of natural gas in shale – a game-changing resource for the world's energy supply – increased natural gas supplies have eroded North American natural gas prices.
- According to the Conference Board of Canada, traditional natural gas markets for Western Canadian natural gas are shrinking.
- Exports to the U.S. are dropping because of their own abundant supplies.
- In the major Eastern Canadian markets, western natural gas competes against supplies closer to market.



**Chart 1.2:** Increased natural gas supplies have eroded North American natural gas prices. Source: ARC Financial Corp.

### Supporting Local Communities and Economies

Our approach to supporting local communities and economies remains the same. Our local employment recruitment policy is still a large part of our hiring strategy and opportunities will be available with the future success of the shale gas and potential liquefied natural gas (LNG) projects.

LNG is seen as an option to monetize our shale gas assets in northeast British Columbia and Nexen continues to develop our LNG strategy. We are in the early stages of studying the viability of building and operating an LNG facility on the coast of British Columbia and we continue to review costs and markets, work through the environmental assessment/regulatory process and progress our plans on preliminary engineering designs.

In keeping with our commitment to sharing information with the communities closest to our operations, we will continue to provide updates on our current and future drilling and completion programs as information becomes available.

### Horn River Basin vs Montney Basin

There have been questions around why the Montney basin has seen more development during the current commodity environment than the Horn River basin. To answer this question, we have to look at the difference between the two basins. While both basins have a tremendous amount of natural gas, parts of the Montney basin contain liquids like condensate and propane. When natural gas prices are low, producers rely on the sale of these liquids to help pay for the well.

The Horn River basin is one of the most prospective gas fields in North America and holds vast resources. There is an estimated 500 trillion cubic feet (tcf) of natural gas in place and potentially 150 tcf is recoverable. The gas is dry natural gas - meaning it contains no liquids. In addition the natural gas contains 8-17 per cent carbon dioxide and trace hydrogen sulfide. These components need to be removed which increases costs and reduces the amount of resultant sales gas.

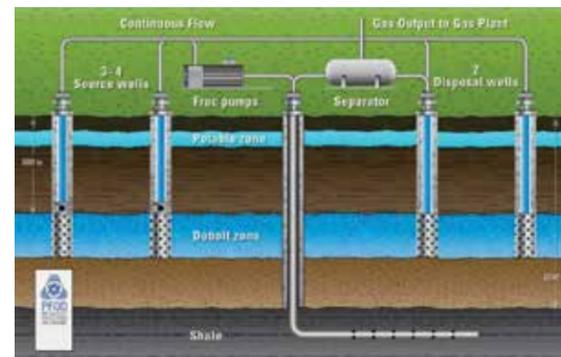
Nexen's Horn River wells are approximately three times more productive (on average) than wells drilled in the Montney. Nexen and our joint venture partner continue to study the viability of building and operating a liquefied natural gas (LNG) facility on the coast of British Columbia. We would require approximately eight drill rigs/year in the ramp up phase and four drill rigs/year in the plateau phase to produce two billion cubic feet of sales-quality natural gas/day to fill two LNG trains. For the Montney, it could take up to 30 drill rigs/year and many more pads to yield the same volume of gas, creating a much larger environmental footprint.

Until late 2014, parts of Montney have been attractive due to liquids, less processing requirements and being closer to market. However, the recent drop in oil and liquids pricing may make developing the Montney basin challenging in the future.

## Reducing Surface Water with Technology

Nexen is continually seeking ways to minimize the amount of surface water used in our operations. In 2009, we began investigating the use of groundwater from the Debolt aquifer near our Dilly Creek shale gas development in Northeast British Columbia as a means to reduce our use of fresh water. Debolt aquifer water is both saline (salty) and sour, meaning it contains hydrogen sulfide and other gases. Historically, industry has had to process this water to remove the hydrogen sulfide before it could be used in oil and natural gas operations, as existing frac pumps were not able to handle the gas contained in the water. This treatment process is expensive and creates a large development footprint.

In April 2014, Nexen piloted the use of conventional frac pumpers where the Debolt water was kept above the bubble point pressure in its natural, untreated state so there was no free gas. The pilot was a success. Nexen incorporated the design and learning into the 11 well program in the summer of 2014. Using the Pressurized Frac on Demand system, we were able to pump Debolt water at 3 m<sup>3</sup>/min (total of 42,000m<sup>3</sup>). This is the first time this was accomplished in the world and has the potential to reduce our surface water usage by up to 70 per cent.



Nexen has successfully tested the world's first Pressurized Frac on Demand technology with conventional frac pumpers.

## Helping to De-weed Fort Nelson

At Nexen, we're committed to partnering with community members and other stakeholders in the areas where we operate. For the past five years, Nexen has been part of the Northern Rockies Invasive Plant Council (NRIPC) – an organization designed to support the management of invasive exotic plants in the Northern Rockies.

Invasive plants grow outside of their native area and have the potential to negatively impact the local environment. Examples of common invasive plants in Fort Nelson include Scentless Chamomile, Common Tansy, Wild Caraway, Hawkweed and Canada Thistle.



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According to Nexen's Megan Valvasori, Environment Lead for Northeast British Columbia, working with NRIPC helps Nexen stay at the forefront of regulatory changes and keeps us up to date on removal techniques related to managing invasive plants. "As a participant of the NRIPC, Nexen sponsored the development of invasive plant signs that will be put up along community trails in Fort Nelson to keep the community informed of the impacts of these plants. This initiative will help community members become familiar with the most common species of invasive plants and what they can do to help manage them."

What can you do to help eliminate invasive plants in your community? Here are a few tips:

- Research garden plants appropriate for your area and don't plant species known to be invasive.
- Clean your clothes, boots and equipment after being in an area where invasive plants are growing.
- If you see a weed, pull it out. Put it in a plastic bag and throw it in the garbage or burn it. Then report it "Report-a-Weed" at [www.reportaweedbc.ca](http://www.reportaweedbc.ca).
- Volunteer as a Weed Warrior with the Northern Rockies Invasive Plant Committee. Information on this program is available at [www.nripc.com](http://www.nripc.com).
- Spread the word about invasive plants to your neighbours.

## Commitment to the Community



R to L: Todd Osbourne (Councillor), Lorraine Gerwing (Councillor), Cathy Dolan (Director of NRSS), Laurie Dolan (Councillor), Carol Seidel (President of NRSS), Cam Foss (Nexen) and Michelle Chabot (Nexen).

### Supporting a Vital Community Service in Fort Nelson

At a special ribbon-cutting ceremony held on Saturday, January 10, in Fort Nelson, British Columbia, Nexen and joint venture partner INPEX Gas British Columbia Ltd. (IGBC) announced a \$65,000 donation for a new community bus for the Northern Rockies Senior Society.

The Northern Rockies Senior Society is a non-profit charitable organization that is dedicated to enriching the lives of seniors in the Fort Nelson community by providing transportation, social and recreational opportunities and facilitating the building of a Supported Living Seniors Society.

According to Nexen's Cam Foss, Manager Operations NEBC, Shale Gas, community investment is more than just financial support for charitable organizations. "Nexen is proud to support this vital community service. This bus is just one example of Nexen's commitment to the communities where we live and work. Since 2010, our ReachOut community investment program has helped strengthen the communities where we live and work through Giving, Matching and Helping, including 35,000 volunteer hours to communities where we operate."

Both Nexen and IGBC have been actively involved in the Fort Nelson community. In addition to donating towards the purchase of the new seniors' bus, the companies also donated \$100,000 over three years to the Fort Nelson Community Literacy Society in 2013.

As signature sponsors, the gift of a new bus will provide transportation that will benefit the entire community.

"The bus is a lifeline to many of our seniors; it enables them to retain their independence and dignity," says Carol Seidel, Northern Rockies Senior Society. "It gives our seniors the freedom to come and go as they please. They are able to attend community and social events which are very important to the well-being of our seniors. We would like to thank Nexen and IGBC for helping to make this all possible."

## Contact Information

For more information about the Fort Nelson plant or Nexen's existing activities in your community, please contact us:

Nexen Fort Nelson Office  
(250) 774-5150

Association of Petroleum Producers (CAPP)  
[www.capp.ca](http://www.capp.ca)

British Columbia Oil and Gas Commission  
[www.bcogc.ca](http://www.bcogc.ca)

Canadian Society of Unconventional Resources (CSUR)  
[www.csur.ca](http://www.csur.ca)

In case of emergency, please call Nexen at: (250) 774-3035

## Safety

### Ice Road Safety at North Liard River Crossing

Safety is a core value at Nexen and the success of every activity we undertake is measured on our ability to execute our work safely each and every day.

We are in our third year of operating the ice bridge over the Liard River. The bridge is 1.5 kilometres long – 750 metres of travel is on gravel and 800 metres on ice. The ice bridge is critical to getting equipment and supplies into North Liard. To date, Nexen has had no incidents related to the crossing.

Travel on any ice bridge has the potential for breakthroughs. Nexen has a trained emergency response team that is vital to ice bridge safety.

The team consists of Nexen employees and supervisors, contractor workers, and paramedics who have all taken an intensive three-day course in first aid and still water and moving water rescue. The team also meets once a week for training. Specialized equipment, including dry suits and an inflatable rescue boat, is kept at the river's edge for immediate response.



Semi-truck delivers materials over Liard River ice bridge. The bridge is 1.5 kilometres long – 750 metres of travel is on gravel and 800 metres on ice.

[www.nexencnooltd.com](http://www.nexencnooltd.com)