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'Made in Canada' LNG: Helping to reduce worldwide pollution

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Image: Shell

GAS LNG

Canada, LNG & the natural gas economy

This article is part of the new monthly editorial series "Canada, LNG & the Natural Gas Economy."

This initiative is supported by the Canadian Society for Unconventional Resources (CSUR), which is a leading Canadian source of factual, unbiased technical information on the development of unconventional oil and gas resources.

Canada has the potential to help the worst polluters in the world get off coal with its abundant supply of natural gas.

The country's unofficial unique brand of producing the most responsible and ethical natural gas in the world could propel Canada into the role as a significant global player in the race to mitigate greenhouse gases.

"LNG can have the greatest impact and greatest contribution to resolving the climate change problem and that should really be Canada's main contribution because it can offset effectively

higher intensity fuels,” says Tristan Goodman, president of the Explorers and Producers Association of Canada (EPAC) industry group.

“The brand is there. The only issue that I am worried about on the branding is it still has to be competitive. Nobody is going to buy our product if it is more expensive because of regulatory burden or uncertainty in getting it to a coast where you can export whether that coast is the East or West Coast.”

Often praised as the clean energy source of the future, natural gas or super-cooled LNG could be the answer to reducing global emissions while displacing sources with higher carbon intensity.

The International Energy Agency (IEA) expects the demand for natural gas to reach just over 4,100 billion cubic metres (bcm) in 2023, up from 3,740 bcm in 2017. With its population growth and long-term strategy to green its energy sources, China is expected to make up 40 per cent of the growth. China’s LNG imports continue to beat records.

“Natural gas is not the bridge fuel; it is the fuel,” the Chinese government has said.

Gary Mar, Petroleum Services Association of Canada (PSAC) president, says: “if we could move natural gas to China we would do more to reducing the GHG emissions in the global atmosphere than if we shut down all the automobiles in Canada.”

Late last year, LNG Canada along with its partners — Royal Dutch Shell plc, PETRONAS, PetroChina, Mitsubishi Corporation and Korea Gas Corporation — signed off on building an export facility in Kitimat, B.C. The \$40-billion price tag makes the project the largest energy investment in Canadian history.

Many see the investment as a much-needed boost to the battered oil and gas sector, representing opportunities to solidify Canada’s brand as a world leader in delivering natural gas and reaching new markets.

EXPANDING OUR HORIZONS

To realize how important a new industry such as LNG is to Canada, you need look no further than the newly formed LNG Narrative Group. This organization was formed by the Canadian Society for Unconventional Resources (CSUR), Resource Works, the Canadian Global Affairs Institute (CGAI) and JWN. The purpose of this coalition is to prepare a compelling narrative to all Canadians on the importance of this transformative industry on behalf of all stakeholders — business, First Nations and government.

Bill Whitelaw, president of JWN, recently observed the need to ensure that this new-generation industry does not suffer from well-organized external forces seeking to restrict and potentially eliminate Canada as a global energy producer. The coalition is committed to ensuring that all interests are at the table and that all voices are heard moving forward.

For CSUR, this narrative means ensuring that the technology of how gas is explored for and subsequently produced is at the foreground and that fact-based and objective science is continually communicated.

“We have the best drilling, completion, production and regulatory processes in the world,” said Dan Allan, the president and CEO of CSUR.

“The rest of the world turns to us to learn and emulate. We need to be proud of our environmental performance in the production of our energy. We need to expand our markets beyond the United States and begin to have an impact on insatiable global energy requirements while contributing to the reduction of global GHG emissions that will incur as we displace other energy sources that are high carbon intensive.”

Dinara Millington, vice-president of research for the Canadian Energy Research Institute (CERI), agrees that Canada needs to expand its market horizons beyond the U.S.

“Historically it was fine,” she says. “That was how [the] market developed and the U.S. was the largest consumer of oil and gas. Things have changed. They are now our number one customer and number one competitor.”

Millington says there is a lot of opportunity out there but market access is a legitimate concern for all Canadian resources.

“For us to be able to impact this dialogue, we really need to be visible on the global scene and we are not,” she says. “Canada does not have any LNG projects. Canada does not have any pipelines to tidewater that could really augment global trades and flow of the molecules. I think that really is number one. I think we need to really step it up and become a global player.”

Bill Gwozd, who is part of a gas-focused industry group called the Centre for Gas and Liquids Monetization, adds that in order for the branding to succeed in helping Canada, there has to be a focus on education.

“We have to have a role here in Canada — educate our own citizens,” he says. “We have maple syrup and mountains but we also have energy. We have to be more proactive on that.”

ENERGY TRANSITION BRINGS NEW OPPORTUNITIES

Susannah Pierce, external affairs director for LNG Canada, says it is important to recognize the world is in an energy transition to reduce greenhouse gases.

“We have the things that can lead towards a pretty unique brand as it relates to generating low-carbon content energy, which then can be used to displace higher carbon content sources of energy,” says Pierce.

Under the Paris Agreement on climate change, countries may work together on implementing their nationally determined contributions (NDCs) to emission reduction. The agreement offers three approaches in the use of international co-operation mechanisms including direct new

sustainable development, non-market based approaches and direct bilateral co-operation. The guidelines around bilateral co-operation are still being worked out, which could make it possible for emission reduction measures to be transferred to another and counted toward its NDC.

“The fact that it was included in the Paris Agreement demonstrates there’s recognition that regionalized climate policies are not effective,” says Pierce. “I think recognizing if you are increasing emissions effectively, in other words, low carbon intensity, in order to displace higher intensity emissions someplace else, we ought to be looking at how do we recognize and incentivize that? Having absolute emission targets doesn’t do anything if those emissions are high carbon intensity. There is recognition of a pathway but [let’s] get those agreements in place.”

When you look at the full lifecycle emissions you can see that LNG produced in British Columbia will have significantly lower carbon emissions per tonne than when it is produced in other places, says Pierce.

The average LNG facility globally emits between 0.26 to 0.35 tonnes of greenhouse gases (in CO₂ equivalent) per tonne of LNG produced, while the LNG Canada facility is being designed to achieve levels of 0.15 tonnes of greenhouse gases per tonne of LNG produced, says Pierce.

“Then when you take LNG and transport it overseas and you use it to displace higher carbon content forms of energy like coal then you can see another significant net reduction,” she says.

“For countries that rely heavily on coal to produce electricity, the LNG from the B.C. project alone could reduce global CO₂ emissions by 60 to 90 million tonnes per year, which is more than the total annual emissions of British Columbia and roughly 10 per cent of Canada’s total annual emissions,” according to LNG Canada.

Mark Pinney, manager of natural gas markets and transportation for the Canadian Association of Petroleum Producers (CAPP), says there is a strategic advantage for Canada to brand its energy as being responsibly developed, as well as a very clean burning fuel, expansive and a dependable resource.

“We are well positioned to serve China and India,” he says. “Natural gas emits roughly half the CO₂ equivalent of coal. There are huge savings. So for every billion cubic feet a day of LNG exports that we would have — let’s say to China — if you were to displace then the equivalent amount of coal in terms of electricity generation, you are looking at something like 18 million tonnes of CO₂ equivalent emissions savings. It’s really helpful for them to improve not only from a GHG perspective but there’s other particulates that when you burn coal, that you don’t have with natural gas from [a] local air quality standpoint.”

TAKING THE LEAD IN BRANDING CANADIAN NATURAL GAS

Nearly 10 years ago the premiers of the three westernmost provinces began to explore opportunities to reduce the barriers to trade, investment and labour mobility across provincial lines.

The result was the New West Partnership, an interprovincial marketplace, eliminating the trade obstacles among Alberta, British Columbia and Saskatchewan. Manitoba joined in 2016.

CERI's Millington says this is one example of a successful collaboration between the provinces.

"Alberta and British Columbia are very similar in terms of natural resources and [their] significant contribution to the local economies," says Millington. "I think it would be in the best interests of both governments to sit down and find points of synergies they can expand further. This is beyond natural gas."

Pierce, external affairs director for LNG Canada, says all the parties have to come together in order to take the lead on a national brand for natural gas. She says it doesn't work when one of the actors doesn't come together.

"You want to ensure you have governments that recognize the importance of having a competitive industry and are able to achieve lower carbon emissions," says Pierce. "And you want to have an industry that recognizes the importance of that as well. It's a blend."

"In our case at LNG Canada, we can be the lowest in terms of carbon intensity because we were able to get to a place that is also competitive. If we are not competitive we do not exist. If you can be competitive in industry and [have] low carbon intensity, then you are actually promoting the right thing. It has to work hand-in-hand with government, and industry working together on those things."