

New Energy for Rural Northwestern Ontario

By Stephanie Ash

Natural gas could soon be a reality for rural communities in Northwestern Ontario.

The Municipalities of Marathon, Terrace Bay, Schreiber, Manitouwadge and Wawa recently submitted applications to the Ontario Energy Board (OEB) to approve what they're calling the North Shore Liquefied Natural Gas (LNG) Project. The project involves the design, construction and operation of local gas delivery systems in each of the five municipalities to provide a new energy supply to homes and businesses.

"This project is a game changer for communities located along the North Shore of Lake Superior," said Daryl Skworchinski. He is the chief administration officer in Marathon and the project Manager for the North Shore LNG Project. "Energy costs are the single largest economic barrier for residents and businesses in the north, and particularly for the industrial base. Providing an alternative source of energy brings unprecedented socio-economic opportunities to the region."

So, what is LNG? Liquefied Natural Gas is exactly what it says it is - a natural gas in its liquid state. When natural gas is cooled to a temperature of about minus 160° C (minus 260° F) at atmospheric pressure, it becomes a clear, colourless and odourless liquid. The volume of gas is also contracted by 600 times during liquefaction, which is one of the main advantages of this technology. Why? LNG can be economically and easily transported by road or sea instead of by pipeline. It can also safely stored for long periods of time in land-based tanks.

What's most fascinating and arguably most underrated about LNG is its characteristics. Not only is LNG odourless but it's also non-toxic, non-combustible and has lower CO2 emissions; making it very clean and good for the environment.

In some parts of the world, LNG has transformed the natural gas market. Previously unrecoverable natural gas finds, which were simply too expensive to access through



LNG PLANT

pipelines, are now an economic reality. These remote natural gas reserves are being transformed into LNG and transported out of remote locations.

Today, LNG is considered to be an emerging Canadian industry that offers new economic benefits and export opportunities, and particularly from western coasts. According to the Conference Board of Canada, developing and exporting LNG from Canada would not only help meet growing global energy demand with cleaner-burning natural gas, but would also provide Canadian jobs. Upstream activities supporting one LNG plant in B.C. exporting two billion cubic feet per day (Bcf/d) would provide 20,000 direct, indirect and induced B.C. jobs.

For the five North Shore municipalities in Northwestern Ontario, LNG presents a unique opportunity to transport natural gas to their communities by truck from a nearby LNG Plant in Nipigon, Ontario. Due to their rural geographical locations along the north shore of Lake Superior, connecting to main natural gas pipeline networks has never been an option.

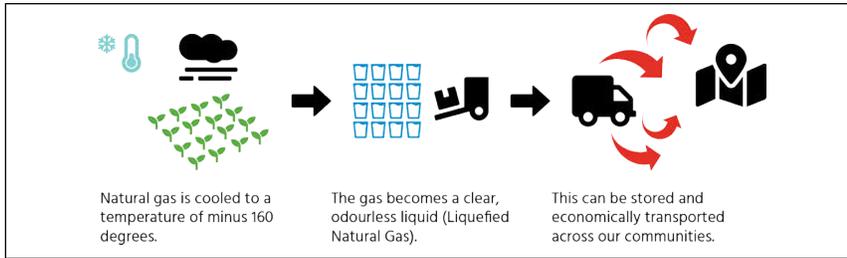
"The primary use of LNG is to simplify transport of natural gas from the source to a destination," said Daryl Skworchinski. "Because of its physical state, natural gas has historically been transported by pipeline, which restricts its reach to rural and remote areas. The high capital cost of constructing pipelines has prevented thousands of homes and businesses in our region from accessing the benefits of



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natural gas. By adopting LNG technology and processes in Northwestern Ontario, our north shore municipalities can purchase natural gas from the Nipigon LNG plant and regassify it in local depots and then feed it into local pipeline infrastructure in each community. It's a new approach for the North but it's an approach that's proven, trusted and incredibly safe."

Although still a relatively new concept to Ontario, the LNG industry has been around for some time. It was first developed in the early part of the nineteenth century in the United States when the East Ohio Gas Company built a full-scale commercial liquid natural gas (LNG) plant in Cleveland, Ohio. The pilot concept was



later fully commercialized in 1964 as a solution to natural gas transportation problems.

If all goes to plan, there will be a new and fully operational LNG Plant in Nipigon, Ontario by 2020. The Project developer is a wholly-owned subsidiary of Northeast Midstream Corp, a Toronto-based partnership that builds and owns energy infrastructure for new and unserved markets. The Nipigon LNG Plant involves the construction and operation of an LNG production plant, approximately 22 kilometres north of Nipigon. It also includes a connecting pipeline to obtain natural gas from the nearby TransCanada Mainline for liquefaction at the LNG Plant.

“Our five municipalities intend to purchase LNG from the Nipigon Plant and transport it by truck from Nipigon to small-scale LNG depots in each municipality,” explained Skworchinski.

“The depots are small insulated tanks that heat the LNG to return the liquid back to conventional natural gas. From there, it will be put into a local gas distribution network to serve homes and businesses. This is a less expensive source of energy for heating fuel and power generation,” he said.

For the municipalities of Marathon, Terrace Bay, Schreiber, Manitowadge and Wawa, the distribution networks and systems will be primarily designed to be located within existing municipal infrastructure. Gas distribution systems would start at the proposed LNG storage depots with the main pipelines travelling along major municipal corridors.

According to figures produced by Cornerstone Engineering Services and Elenchus Research Associates in 2018, the average residential customer is expected to save on

average 36% to 61% annually before the cost of converting, while commercial and institutional customers are expected to save on average 35% to 50% annually. Overall, the research predicts that Northern residents and businesses will save \$247 million on energy bills over 40 years.

Primary space heating and water heating sources in the five North Shore communities are currently limited to propane, fuel oil, wood and electricity.

“For the average resident, we are predicting energy cost savings of approximately \$1,600 per year when converting from diesel or oil-based heating sources,” said Skworchinski. “This number will be even higher for commercial and industrial customers. We are looking at this project to help our municipalities improve energy affordability for local people as well as sustain existing industrial operations. We also believe that an affordable gas supply in our region will be essential to attracting new development and emerging economic sectors.”

With a total price tag of approximately \$65 million, the North Shore LNG Project is a regionally significant initiative for the economic development of Northern Ontario with future possibilities for expansion to Northern and First Nation communities.

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