



PRELIMINARY PROJECT CONFIGURATION – FEBRUARY 2014

**FEEDBACK  
FORM INSIDE**



# WOODFIBRE LNG PROJECT

Community Consultation  
Discussion Guide and Feedback Form  
FEBRUARY 3 – 28, 2014



**Woodfibre  
LNG**

# Community Consultation – February 3-28, 2014

The Woodfibre LNG Project is a proposed small-scale liquefied natural gas (LNG) processing and export facility, located approximately seven kilometres southwest of Squamish, British Columbia. The Project is in the early stages of planning and development.

Woodfibre LNG is conducting a round of community consultation from February 3-28, 2014, the first of several rounds of Woodfibre LNG-led consultation regarding the Project. Woodfibre LNG-led consultation is in addition to regulator-led public comment periods that will be part of the environmental assessment for the Project.

**During this early round of consultation, Woodfibre LNG is providing information about the Project and seeking feedback regarding several topics related to project planning and environmental assessment including:**

- Environmental, socio-economic and socio-community studies
- Current engineering and environmental studies
- Public recreational access to back country
- Future consultation methods and project updates

**You can learn more at [woodfibrelngproject.ca](http://woodfibrelngproject.ca) and provide feedback by:**

- Reading this consultation discussion guide and completing the feedback form
- Attending a small group meeting or open house (see schedule below)
- Providing a written submission:
  - Email: [info@woodfibrelngproject.ca](mailto:info@woodfibrelngproject.ca)
  - PO Box 280, Squamish, B.C. V8B 0A3

The input that you provide during this consultation will be considered by the project team, along with technical and socio-economic considerations, in the plans for the Woodfibre LNG Project and development of mitigation measures for potential project effects.

## SMALL GROUP MEETING SCHEDULE

If you would like to attend a small group meeting, please email [info@woodfibrelngproject.ca](mailto:info@woodfibrelngproject.ca) or call 1-888-801-7929 with your name, contact information and the date, time and location of the meeting you would like to attend. As space is limited, your RSVP is appreciated.

COMMUNITY	DATE	TIME
Squamish	Tuesday, February 4	1:00 - 3:00 p.m.
West Vancouver	Tuesday, February 4	6:00 - 8:00 p.m.
Whistler	Wednesday, February 5	1:00 - 3:00 p.m.
Squamish	Thursday, February 6	1:00 - 3:00 p.m.
Squamish	Thursday, February 6	6:00 - 8:00 p.m.
Britannia Beach	Wednesday, February 12	1:00 - 3:00 p.m.

## OPEN HOUSE SCHEDULE

Open houses are a drop-in format. No RSVP is required.

COMMUNITY	DATE	TIME	LOCATION
Squamish	Wednesday, February 5	5:00 – 8:00 p.m.	<b>Howe Sound Inn</b> 37801 Cleveland Ave.
Squamish	Saturday, February 15	1:00 – 4:00 p.m.	<b>Executive Suites Hotel &amp; Resort</b> 40900 Tantalus Road

# What is the Woodfibre LNG Project?

The Woodfibre LNG Project is a proposed small-scale liquefied natural gas (LNG) processing and export facility, located approximately seven kilometres southwest of Squamish, British Columbia.

The Project would be located on an existing industrial site, the former Woodfibre pulp mill, which is well suited for conversion to an LNG facility.

## The Woodfibre site is a brownfield industrial site on private property, and features:

- An existing FortisBC gas pipeline
- An electricity transmission line connected to the BC Hydro transmission grid
- An existing deep-water port for receiving and loading ships
- Industrial zoning in the District of Squamish and a designation of employment and industrial use under the District of Squamish's Official Community Plan (OCP)

Natural gas would be delivered to the Woodfibre site through the existing and expanded FortisBC pipeline, where it would be liquefied and loaded into carriers for shipment. It is currently anticipated that the Project could export approximately two million tonnes of LNG per year, which is about one-tenth of the anticipated volume of some of the large LNG projects proposed for northern B.C.

*More information regarding the Project components, activities and layout can be found on page 4.*

Based on the current project schedule, and subject to environmental approvals, we anticipate that the Woodfibre LNG Project could be operational by 2017.

## WHAT WORK IS CURRENTLY TAKING PLACE FOR THE WOODFIBRE LNG PROJECT?

### Current work being undertaken for the proposed Woodfibre LNG Project includes:

- **Cleaning up the Woodfibre Site:** Woodfibre LNG is acquiring the site from Western Forest Products, subject to the completion of remediation of the site by Western Forest Products, including activities such as dredging and removal of asbestos, and the issuance of a Certificate of Compliance from the Ministry of Environment.
- **Choosing the Best Technology for the LNG Facility:** With the assistance of professional engineers with international expertise in LNG, Woodfibre LNG will seek to adopt the right technology for the project and develop the project layout. Decisions will be made based on safety and reliability.
- **Securing Access to a Reliable Natural Gas Supply:** Natural gas would be transported to the facility through an existing and expanded FortisBC natural gas pipeline.
- **Obtaining a Gas Export License:** In December 2013, the National Energy Board granted Woodfibre LNG with a license to export approximately 2.1 million tonnes of LNG annually from the Woodfibre site. Formal confirmation of this decision is expected from the federal government in 2014.
- **Initiating the Environmental Assessment Process:** In November 2013, Woodfibre LNG filed a Project Description with the Canadian Environmental Assessment Agency and the B.C. Environmental Assessment Office to initiate the environmental assessment process.

## THE LNG PROCESS



# About the Woodfibre Site

The Woodfibre site is within the District of Squamish, about seven kilometres south west of downtown Squamish. Until the closure of the pulp mill in 2006, Woodfibre was a substantial contributor to the district's tax base. The site is zoned for industrial use and the District of Squamish's Official Community Plan designates it for employment and industrial use.

In 2013, Woodfibre LNG signed a purchase agreement with Western Forest Projects to acquire the Woodfibre property. As a condition of purchase, Western Forest Products is responsible for cleaning up the site, and obtaining a Certificate of Compliance from the Ministry of Environment.

## WHAT ARE YOU DOING TO CLEAN UP THE EXISTING SITE?

Woodfibre LNG is committed to meeting environmental standards and starting our proposed Project off on the right track. This is why we have made thorough remediation of the Woodfibre site and issuance of a certificate of compliance from the BC Ministry of Environment a condition of purchasing the property from Western Forest Products.

**The following are some of the activities that will be examined as part of the remediation plan:**

- Remediating soil
- Remediating upland portions of the site
- Dredging of woodchips and sediment along the shoreline
- Asbestos removal and capping of disposal area

**Upon the issuance of the certificate of compliance and the transfer of property ownership, Woodfibre LNG will also look at the possibility of further remediation activities such as:**

- Landfill containment and closure
- Creating green spaces and buffer zones around Mill Creek and Woodfibre Creek
- Remediating, where required, Mill Creek and Woodfibre Creek
- Improving the existing visual impact of site



THE WOODFIBRE SITE IN 2013

# What does the Woodfibre LNG Project include?

The preferred configuration for the Woodfibre LNG Project would consist of the following major components:

1. **A natural gas metering system** to receive gas from FortisBC's pipeline
2. **A natural gas pre-treatment system** to remove non-liquefiable elements, such as water vapour and carbon dioxide, prior to the liquefaction process. These would be disposed of according to environmental regulations
3. **A jetty** to the loading berth designed to allow deep water access for facilities and carriers
4. **A natural gas liquefaction plant** to convert natural gas into a liquefied state
5. **A permanently<sup>1</sup> moored floating LNG storage system** to store liquefied natural gas prior to offloading it to LNG carriers
6. **A marine terminal and LNG transfer system** to offload LNG from the storage units into ocean-going LNG carriers
7. **Supporting infrastructure** to ensure the safety of the workforce and community, and storage facilities, heliport, etc.

## Potential Configurations

There are two potential configurations for the major components of the Woodfibre LNG Project currently being examined. The preferred configuration would have both the natural gas pre-treatment system and liquefaction plant on a permanently moored barge, near to the site. The alternative configuration would have the pre-treatment and liquefaction components on shore.

Engineering work to evaluate the best configuration option is ongoing and will continue throughout 2014. Other alternative layouts may emerge through the environmental assessment process.

<sup>1</sup>Permanent refers to the 25-year life of the Project, which is the length of the export license that has been granted to Woodfibre LNG by the National Energy Board. Subject to renewal of the export license, and refurbishment of facilities and equipment, the Project could remain in operation for 50 years or more.



# Frequently Asked Questions

## 1. WHO OWNS THE WOODFIBRE LNG PROJECT?

The Woodfibre LNG Project is owned by Woodfibre Natural Gas Limited, a privately-held Canadian company with headquarters in Vancouver.

Woodfibre Natural Gas Limited is related to Pacific Oil & Gas Limited, an energy company within the RGE group of companies. RGE, headquartered in Singapore, manages various world-class companies focused on resource-based manufacturing industries. RGE Group manages assets exceeding US\$15 billion and employs over 50,000 people worldwide.

## 2. WHAT IS LIQUEFIED NATURAL GAS?

Liquefied natural gas, or LNG, is natural gas in a liquid state. It is the same gas used to heat homes and the same gas found in gas range stoves. This gas becomes a liquid when it is cooled at atmospheric pressure to approximately -162°C. This process, called liquefaction, shrinks the volume of the gas by 600 times, making it easier to store and transport to markets around the world.

Upon arriving at its delivery destination, LNG is warmed to its original gaseous state where it can be used for various purposes from heating and cooling homes, generating electricity, and fuelling heavy-duty vehicles. LNG is odourless, colourless, non-corrosive, non-toxic and less dense than water. Although a large amount of energy is stored in LNG, it cannot be released rapidly enough to cause the overpressures associated with an explosion.

## 3. IS LNG SAFE?

LNG is odourless, colourless, non-corrosive and non-toxic. Unlike oil, LNG is less dense than water, so in the highly unlikely event of a release, it would evaporate, requiring no environmental clean-up.

As the cleanest burning fossil fuel, it is being used throughout the world to reduce carbon dioxide emissions by replacing less efficient fuels. According to an independent study by Pace Global Energy Services, replacing just one 500 megawatt coal-fired power plant with natural gas fuelled power generation for one year, equates to taking 557,000 cars off the roads.

## 4. ARE YOU INVOLVED IN FRACKING?

We understand that some British Columbians have concerns with the process of hydraulic fracturing (fracking) to extract oil and gas. This is not an extraction project. The Woodfibre LNG Project would liquefy surplus natural gas purchased from B.C. producers in the open market, some of which may have come from fracking in B.C. or elsewhere. However, given

the relatively small scale of this project (about one-tenth the size of large LNG projects proposed in northern B.C.), it is anticipated that the Woodfibre LNG Project would not result in any new exploration or extraction activity.

Natural gas would be delivered to Woodfibre through an existing and expanded FortisBC pipeline, which also provides gas supply to Squamish, Whistler and Vancouver Island.

## 5. HOW CAN YOU BE SURE THAT THE PROJECT WILL BE SAFE?

The LNG industry has a strong safety record due to regulations and training, an understanding of the physical and chemical properties of LNG, and constantly improving technologies.

If built, the Woodfibre LNG Project would be constructed and operated with:

- Use of appropriate materials and compliance with industry and safety best practices
- Proper engineering design of all onshore and floating facilities (taking into account the results of our baseline environmental studies)
- Safety and emergency shutdown systems
- Established safe distances from the facility and carriers away from communities, ships and recreational users, as determined by Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites, known as TERMPOL, and the environmental assessment process

Regarding the transportation of LNG, from 1964 to the end of 2012, more than 70,000 loaded cargos of LNG shipped without major incident both at port and at sea. This means over 140,000 return journeys. Unlike oil, LNG is less dense than water, so in the highly unlikely event of a release, it would evaporate. The carriers employed for this project will be double-hulled ships specifically designed to handle liquefied natural gas at its -162°C temperature, with state-of-the-art safety and security technology. LNG is always transported at atmospheric pressure.

*For more information regarding safety, please see page 13.*

## 6. WHAT RISKS ARE ASSOCIATED WITH AN LNG FACILITY? CAN IT EXPLODE?

While in liquid form, natural gas cannot burn or explode. This is because there is no oxygen or air in LNG, which is required for either of those reactions to occur. If LNG were to come in contact with warmer air, it would start to return to a gaseous state. Since natural gas (which is mostly methane) is less dense than air, it would evaporate into the atmosphere. There are very specific conditions under which natural gas can ignite or explode. There must be a confined space, the

## FREQUENTLY ASKED QUESTIONS CONTINUED

right fuel-to-air ratio, as well as a spark, which would not occur at an LNG facility. LNG is stored and transported at atmospheric pressure.

There are many LNG facilities around the world that operate safely adjacent to or within existing urban areas. Some examples include FortisBC's Tilbury LNG Plant in Delta, the Everett Marine Terminal near Boston, Barcelona LNG in Barcelona, and the Shanghai LNG terminal in Shanghai.

### 7. WILL THE PROJECT IMPACT THE SURROUNDING ENVIRONMENT?

We are committed to avoiding, limiting and mitigating potential environmental impacts to the site and surrounding areas. Woodfibre LNG is still finalizing the specifics of engineering, but we will only select safe and reliable technology. Our continuing environmental studies along with community consultation will be used to determine required mitigation measures as part of the environmental assessment process. Consultation input and feedback will also be used to assist in making the best design and engineering decisions for the site.

*For more information regarding the environmental assessment for the Project, including studies to be undertaken, please see page 10.*

### 8. HOW WILL THE PROJECT BE POWERED – WILL YOU BE BURNING GAS?

There are two options for powering an LNG plant of this relatively small size: electricity or natural gas. Woodfibre LNG's preferred option is to use electricity, which is feasible, due to the Project's relatively smaller electricity needs – 140 MW. The use of electricity would lead to less emissions, and therefore lower potential impacts to air quality.

We are discussing options with BC Hydro regarding the use of electricity to power the LNG plant.

### 9. WHAT EFFECTS WILL THE PROJECT HAVE ON AIR QUALITY IN THE AREA?

We recognize concerns that the community has regarding potential effects of the Project on air quality. We are committed to reducing our effects on air quality, which is why we are working to use electricity to power our LNG facility.

We will be studying potential project effects on air quality as part of the environmental assessment process, and will develop mitigation measures, as necessary.

### 10. WILL YOU BE AFFECTING THE WATERS OF HOWE SOUND?

We anticipate that the Woodfibre LNG Project will have little impact on marine waters. Through community consultation, and identification of sensitive area needs and continued environmental studies, we will develop mitigation measures for any potential effects, which will be reviewed through the environmental assessment process.

LNG carriers would be required to exchange waste and ballast water while in open ocean, at least 200 nautical miles from the shoreline, consistent with rules currently in place for ships that use Howe Sound.

### 11. WHY DID YOU CHOOSE TO LOCATE THIS PROJECT IN SQUAMISH?

We began by looking all across North America for a suitable site. Our criteria focused mainly on whether there was existing infrastructure and a site which could be adapted to an LNG facility with minimal environmental impacts.

We wanted to distinguish ourselves from many of the larger projects in northern B.C. that you may have heard about – instead of building brand-new large-scale infrastructure, we were looking for a site where key elements were already in place and optimal for conversion to an LNG facility.

What we found at Woodfibre was:

- A brownfield site with an existing gas pipeline and electricity transmission line
- An existing deep water port
- A history of industrial land use

*For more about the Woodfibre site, including plans for remediation of the existing site, please see page 8.*

### 12. HOW MANY SHIPS WILL THIS PROJECT BRING TO HOWE SOUND? AND, HOW CAN YOU BE SURE THAT SHIPPING LNG THROUGH HOWE SOUND IS SAFE?

As a small-scale LNG project, we anticipate that there would be approximately three to four LNG carriers per month calling at the terminal, or about 40 carriers per year. The carriers would arrive and depart using existing shipping lanes through Georgia Strait and Haro Strait and Howe Sound. They would be guided by tug boats, to ensure they stay on course and follow the rules of marine traffic including speed limits. The escort vessels also manage the area around the vessel to prevent conflicts with ferries and pleasure craft. BC Coast Pilots will be on-board and will ensure appropriate communications, safe practices, traffic routing, and that safety procedures are always followed.

## FREQUENTLY ASKED QUESTIONS CONTINUED

### 13. HOW MUCH WILL WOODFIBRE LNG PAY IN MUNICIPAL TAXES?

Woodfibre LNG will be a significant contributor to the tax base of the District of Squamish. The specific figure will be determined through work with the BC Assessment Authority and the District of Squamish.

### 14. WHO IS PAYING FOR THIS PROJECT? IS ANY GOVERNMENT OR PUBLIC MONEY INVOLVED?

The Woodfibre LNG Project would be funded entirely by private-sector investment; no government money or subsidies will be received. Woodfibre LNG would be a contributor to provincial and municipal tax bases, and would pay for any relevant improvements required of the BC Hydro system.

### 15. WILL THE COMMUNITY AND FIRST NATIONS HAVE A SAY IN THE PROJECT?

Yes, Woodfibre LNG will be undertaking consultation with communities in Howe Sound. This current round of consultation, February 3-28, is the first of what we anticipate will be several rounds of Woodfibre LNG-led consultation. In the next round of consultation, anticipated to be held in spring 2014, we would present information regarding studies underway for the assessment of the project, an update regarding technical work, and seek feedback regarding mitigation for potential project effects, and potential community benefits. Further consultation regarding more detailed aspects of the Project would be conducted later in project development.

The consultation that we are hosting is in addition to opportunities for public comment that we anticipate will be provided by regulators through the environmental assessment process.

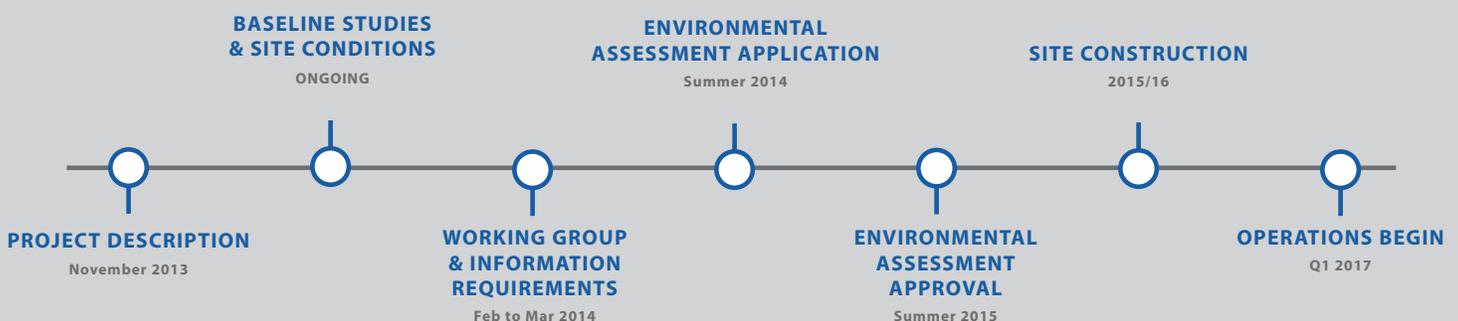
A separate but parallel consultation process will be undertaken with First Nations. We have initiated conversations with First Nations to find out how they want to be consulted about the Woodfibre LNG Project.

#### ANTICIPATED OPPORTUNITIES FOR PUBLIC INPUT



*Note: Environmental assessment public comment periods will be determined and hosted by provincial and federal regulators.*

#### ANTICIPATED ENVIRONMENTAL ASSESSMENT PROCESS TIMELINE



# What are the Project benefits to the environment and local community?

We want to create a long-term social, environmental and economic connection with the communities in Howe Sound. The Woodfibre LNG Project would create economic growth in the region, as we are planning to work with the community, post-secondary institutions and all levels of government to ensure that local companies and residents benefit from the opportunities that the project would create. Woodfibre LNG will look to hire for qualified construction and operations positions from within Squamish and nearby areas.

## Based on early project estimates, the Woodfibre LNG Project would create:

- Approximately 600 jobs throughout the course of construction
- Approximately 100 full time jobs (in shifts) for more than 25 years
- Office administration positions in Squamish and Vancouver

Our goal is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound over the past few years.

We will look to support the environment, the community and economic growth through efforts such as:

## Community

- Providing legacy benefits for Squamish and Howe Sound in the areas of sports and education.
- Preserving cultural heritage
- Working with heritage organizations to celebrate the history and significance of the Woodfibre site and the community that once existed there

## Environment

- Remediating the existing site
- Supporting ongoing cleanup efforts in the Howe Sound area
- Optimizing the existing infrastructure on the site to minimize environmental impacts
- Responsibly managing private forest lands not required for the project
- Being good stewards of the forest, fisheries, wildlife and water resources on the site

## Economic Growth

- Supporting individual capacity and development of transferable skills through training
- Support local business capacity for longer-term diversification and stability
- Building ongoing employment opportunities with local residents and First Nations by providing opportunities to upgrade skills
- Identifying new opportunities for economic development
- Developing regional approaches for long-term local employment needs

### KEY BENEFITS & AREAS OF WORK



Remediating the Woodfibre site



Creating jobs



Providing training opportunities



Generating local, provincial and federal taxes



Providing community legacy benefits



Engaging the community



Minimizing visual impacts



Ensuring safe transportation



Protecting water and air quality



Keeping the community safe, while providing potential recreational opportunities

# Environmental Assessment

The Woodfibre LNG Project will undergo an independent environmental assessment process under the *Canadian Environmental Assessment Act* and the *British Columbia Environmental Assessment Act*, which are administered by the Canadian Environmental Assessment Agency and the BC Environmental Assessment Office, respectively.

In November 2013, Woodfibre LNG filed a Project Description with these two regulators, which initiated the environmental assessment process. While the environmental assessment process for the Woodfibre LNG Project has yet to be determined by regulators, it is anticipated that there would be at least two additional opportunities for public comment during the environmental assessment. These would include an opportunity to review the scope of studies that Woodfibre LNG will have to complete as part of the assessment, and an opportunity to review the application that Woodfibre LNG will file to receive an environmental assessment certificate.

For more information about how to participate in the British Columbia Environmental Assessment Process, please visit [www.eao.gov.bc.ca](http://www.eao.gov.bc.ca)

For information about the Canadian Environmental Assessment Process, please visit [www.ceaa-acee.gc.ca](http://www.ceaa-acee.gc.ca)

## CONSULTATION TOPIC

### Environmental, Socio-Economic and Socio-Community Studies

The Woodfibre LNG Project is currently undertaking baseline environmental, socio-economic and socio-community studies to determine current conditions in the project area. The studies that we are undertaking include marine habitat, terrestrial wildlife and air quality.

The results of these studies will be used to determine potential project effects, and in developing mitigation measures, as required.

**Future areas of study as part of the environmental assessment would be determined by regulators, but may include:**

- Accidents and malfunctions
- Air quality, climate and greenhouse gases (GHG)
- Ambient light
- Aquatics and water quality
- Assessment coordination, management, health and safety
- Contamination/groundwater
- Cumulative effects
- Freshwater plant and animal life (flora and fauna)
- Heritage
- Human health assessment
- Land and resource use
- Marine slope risk
- Marine plant and marine life (flora and fauna)
- Navigable waters
- Noise
- Terrestrial resources and wildlife
- Visual aesthetics

Woodfibre LNG is interested in your feedback regarding this initial list of study areas, including whether there are additional areas that you would like Woodfibre LNG to study.

**TO ANSWER QUESTIONS REGARDING THIS TOPIC, PLEASE SEE PAGE 15 IN THE FEEDBACK FORM.**

# Current Engineering and Environmental Studies

To assist with project planning and environmental assessment, Woodfibre LNG is currently studying the following topics:

- **Minimizing Effects on the Howe Sound and Sea-to-Sky Airsheds:** Woodfibre LNG is actively exploring ways to reduce the effects of the Project on air quality, including the potential use of electricity to power the LNG facility.
- **Public Safety and Security:** There will be areas around the Woodfibre LNG facility and carriers where only authorized personnel can enter. Woodfibre LNG is currently studying options for the location of Project components to get a better understanding of the location and extent of these safety zones. Subject to the results of this work and any public safety regulations, there may be opportunities to provide public access to backcountry. For more information on this topic, please see page 12.
- **Transportation of LNG:** Woodfibre LNG recognizes that residents and recreational boaters may have concerns about LNG carriers in Howe Sound. We are currently studying ways to maximize the safety and predictability of LNG carrier movements, while minimizing impacts to other uses of Howe Sound.
- **Reducing Visual Impacts of the Site:** Through early discussions with local government, community members and the tourism industry, we recognize that there is interest in the landscaping of areas of the site that are not required for the Project. These areas, which are currently covered in concrete, would likely be planted, to reduce the visual impact of the site from surrounding areas.

Woodfibre LNG is interested in any comments you may have regarding these studies.

TO ANSWER A QUESTION REGARDING THIS TOPIC, PLEASE SEE PAGE 16 IN THE FEEDBACK FORM.



HOWE SOUND



## CONSULTATION TOPIC

# Public Recreational Access to Back Country

The Woodfibre site comprises approximately 86 hectares (213 acres). There will be areas around the Woodfibre LNG facility and carriers where only authorized personnel can enter. Woodfibre LNG is currently studying options for the location of Project components to get a better understanding of the location and extent of these safety zones. Subject to the results of this work and any public safety regulations, there may be opportunities to provide public access to back country areas of the site beyond the safety zones. If such opportunities exist, a preliminary concept under consideration is whether access could be provided through the construction of a jetty and check-in facility, or through a ferry from downtown Squamish.

Woodfibre LNG is interested in your input regarding this idea, as well as what activities you undertake in the Squamish area.

**TO ANSWER QUESTIONS REGARDING THIS TOPIC, PLEASE SEE PAGE 17 IN THE FEEDBACK FORM.**



# Safety, Security and Transportation

**The safety of the community, the environment and the site is paramount. Should the Woodfibre LNG Project proceed, we would use industry best practices and standards in our operations.**

## **IS THE LNG INDUSTRY SAFE? WHAT IS ITS TRACK RECORD?**

The LNG industry has a strong safety record due to regulations and training, an understanding of the physical and chemical properties of LNG, and constantly improving technologies. The largest incident in the LNG industry occurred in Cleveland, Ohio in 1944. Due to the war, nickel – the essential element able to withstand the -162°C temperature of LNG – was sparse and the LNG storage tanks were not built to sufficient safety standards. Due to this compromise, cracks formed in the tanks and LNG leaked into a nearby sewage system, where in the confined space it returned to its gaseous stage, mixed with air and sewage gas and found a source for ignition. From this incident many lessons were learned and rigid safety standards were developed and continually improved upon.

From 1964 to the end of 2012, more than 70,000 loaded cargos of LNG shipped without major incident both at port and at sea. This means over 140,000 return journeys. Unlike oil, LNG is less dense than water, so in the highly unlikely event of a release, it would evaporate.

LNG carriers are double-hulled ships specifically designed to handle liquefied natural gas at its -162°C temperature. To protect against accidents, there is more than six feet of space between the inner and outer hulls and the cargo tanks. LNG carriers are also equipped with state of the art technology to ensure safety and security, this includes:

- advanced radar systems
- leak detection
- emergency shut down and positioning systems.

## **WHAT SAFETY MEASURES WOULD BE IN PLACE AT THE WOODFIBRE LNG PROJECT?**

While recognizing the LNG industry's excellent track record, Woodfibre LNG will not make any safety or security compromises.

An incident response process would be in place for all aspects of the Woodfibre LNG facility and vessel shipping. These emergency response procedures are regulated under the BC Oil and Gas Commission, the provincial and federal environmental assessment processes and by individual provincial and federal regulators for protection and safety of the general public, employees and the environment.

The Woodfibre LNG facility itself would have several elements of protection, including:

- Use of appropriate materials and compliance with industry and safety best practices
- Proper engineering design of all onshore and floating facilities (taking into account the results of our baseline environmental studies)
- Safety and emergency shutdown systems
- Established safe distances from the facility and carriers away from communities, ships and recreational users, as determined by Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites, known as TERMPOL, and the environmental assessment process

Security measures for the Woodfibre LNG Project, including the facility and LNG carriers, would be regulated by Transport Canada, and would prevent other ships from getting near LNG carriers while they are docked at the terminal. Carriers would have a BC Coast Pilot on board, and would be accompanied by tugboats to assist with safe navigation.

The connectors between Woodfibre and LNG carriers would also be equipped to accommodate varying tide levels and the unloading arms would be equipped with an automatic shut off, in the case of an emergency.

The Woodfibre LNG facility would be monitored of state-of-the-art security systems and would be patrolled by security at all hours. As an added precaution, tugboats would also be employed to monitor the marine safety zones around the site.

## **THERE ARE ALREADY FERRIES AND OTHER BOATS IN HOWE SOUND – HOW MANY LNG SHIPS WILL BE ADDED TO THIS AREA?**

The Woodfibre LNG Project would have three to four carriers a month. For each journey, experienced and accredited BC Coast Pilots would board the carriers at the designated boarding station (Vancouver Island) to assist with safe channel navigation and berthing along with the assistance of tugboats.

Woodfibre LNG is undergoing the Transport Canada TERMPOL process which is a thorough assessment of safety and risks associated with vessel movement to and from terminals. We will work with Transport Canada and all applicable regulatory bodies to determine mitigation measures. All international and Canadian regulations for safe navigation will be strictly adhered to.

Woodfibre LNG is also in early discussions with local government, community members and other industries, regarding joint efforts to monitor vessel traffic in the Howe Sound.

### **WHAT ROUTE WOULD THE SHIPS TAKE WHEN THEY DEPART WOODFIBRE?**

Vessels from the Woodfibre LNG Project will pass through Howe Sound, through the existing shipping routes of Georgia Strait and Haro Strait, to the Pacific Ocean. Tugboats would assist with safe navigation, and marine traffic would be monitored by the Coast Guard and marine pilotage services.

Speed limits are also enforced along the route:

- Howe Sound: 8 Knots
- Georgia Strait, Boundary Pass and Haro Strait: 12 Knots
- Open ocean: 20 Knots

**Below are the distances from the Woodfibre LNG Project to key points:**

- Watts Point: 2.6 kilometres
- Mouth of Howe Sound: 40 kilometres
- Open ocean (past Ogden Point): 300 kilometres



HOWE SOUND

## Environmental, Socio-Economic and Socio-Community Studies

Woodfibre LNG is currently undertaking baseline environmental, socio-economic and socio-community studies to determine current conditions in the project area. The studies that we are undertaking include marine habitat, terrestrial wildlife and air quality.

The results of these studies will be used to determine potential project effects, and in developing mitigation measures, as required.

### Future areas of study as part of the environmental assessment would be determined by regulators, but may include:

- Accidents and malfunctions
- Air quality, climate and greenhouse gases (GHGs)
- Ambient light
- Aquatics and water quality
- Assessment coordination, management, health and safety
- Contamination/groundwater
- Cumulative effects
- Freshwater plant and animal life (flora and fauna)
- Heritage
- Human health assessment
- Land and resource use
- Marine slope risk
- Marine plants and animals (flora and fauna)
- Navigable waters
- Noise
- Terrestrial resources and wildlife
- Visual aesthetics

1. Please rate your level of agreement with the above areas of study:

**STRONGLY AGREE**

**SOMEWHAT AGREE**

**NEITHER AGREE NOR DISAGREE**

**SOMEWHAT DISAGREE**

**STRONGLY DISAGREE**

2. Please provide reasons for your level of agreement or any additional areas that you think should be studied:

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# Public Recreational Access to Back Country

The Woodfibre site comprises approximately 86 hectares (213 acres). There will be areas around the Woodfibre LNG facility and carriers where only authorized personnel can enter. Woodfibre LNG is currently studying options for the location of Project components to get a better understanding of the location and extent of these safety zones. Subject to the results of this work and any public safety regulations, there may be opportunities to provide public access to back country areas of the site beyond the safety zones. If such opportunities exist, a preliminary concept under consideration is whether access could be provided through the construction of a jetty and check-in facility, or through a ferry from downtown Squamish.

4. Please rate your level of agreement with Woodfibre LNG pursuing public recreational access to back country, subject to definition of safety zones:

<b>STRONGLY AGREE</b>	<b>SOMEWHAT AGREE</b>	<b>NEITHER AGREE NOR DISAGREE</b>	<b>SOMEWHAT DISAGREE</b>	<b>STRONGLY DISAGREE</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Please indicate which of the following activities you participate in (select all that apply):

<b>HIKING</b>	<input type="checkbox"/>
<b>TRAIL RUNNING</b>	<input type="checkbox"/>
<b>BACK COUNTRY SKIING</b>	<input type="checkbox"/>
<b>SNOWSHOEING</b>	<input type="checkbox"/>
<b>OTHER</b>	<input type="checkbox"/>

6. Please provide any additional comments you may have regarding these or other ideas or public recreational access to the back country:

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# Consultation Methods and Project Updates

7. Please rate how likely you would be to participate in each of the following consultation methods in future rounds of Woodfibre LNG-led consultation:

	VERY LIKELY	SOMEWHAT LIKELY	NEITHER LIKELY NOR UNLIKELY	SOMEWHAT UNLIKELY	VERY UNLIKELY
ATTENDING SMALL GROUP MEETING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ATTENDING AN OPEN HOUSE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PARTICIPATING IN A PHONE INTERVIEW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ATTENDING A WEBINAR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMPLETING AN ONLINE FEEDBACK FORM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROVIDING A WRITTEN SUBMISSION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Please indicate how likely you would be to read information regarding the Woodfibre LNG Project and future consultation opportunities received by:

	VERY LIKELY	SOMEWHAT LIKELY	NEITHER LIKELY NOR UNLIKELY	SOMEWHAT UNLIKELY	VERY UNLIKELY
EMAIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PHONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NEWSPAPER ADVERTISEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SOCIAL MEDIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MAIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Please provide any additional comments you may have about consultation regarding the Woodfibre LNG Project.

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# How Input Will Be Used

The input that you provide during this consultation will be considered by the project team, along with technical and socio-economic considerations, as we plan for the Woodfibre LNG Project and develop mitigation measures for potential project effects.

## Contact Information

Please provide your contact information *(optional)*:

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Organization (if applicable) \_\_\_\_\_

Postal Code \_\_\_\_\_ Phone # \_\_\_\_\_

Email \_\_\_\_\_

*Personal information collected relates directly to the consultation process for the proposed Woodfibre LNG Project. If you have questions, please contact Woodfibre Natural Gas Limited by telephone at 1-888-801-7929 or by e-mail at [info@woodfibrelngproject.ca](mailto:info@woodfibrelngproject.ca).*

**PLEASE RETURN YOUR FEEDBACK FORM BY FEBRUARY 28, 2014.**

**WEB:** [woodfibrelngproject.ca](http://woodfibrelngproject.ca)

**EMAIL:** [info@woodfibrelngproject.ca](mailto:info@woodfibrelngproject.ca)

**MAIL:** Woodfibre LNG Project  
PO Box 280  
Squamish, B.C.  
V8B 0A3