Proposed Woodfibre LNG Project – Comments #1601 – 1702, Table 17 of 17

The following table includes Woodfibre LNG Limited's responses to comments #1601 - 1702 submitted to the BC Environmental Assessment Office (EAO) as part of the 60-day public comment period held between January 22 and March 23, 2015. The following table is sorted chronologically. Where multiple comments were received in one submission, they have been separated to allow for specific responses.

EAO has reviewed the public's comments and Woodfibre LNG Limited's responses and is satisfied that Woodfibre LNG Limited has addressed the public's comments for the purpose of the Application stage of the Environmental Assessment for the proposed Woodfibre LNG Project. The time and effort taken by those who submitted comments to EAO during the public comment period is appreciated and all of the comments received will be considered in the Environmental Assessment of the proposed Woodfibre LNG Project.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1601	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	I am a concerned citizen living in Lions Bay on Howe Sound and I vehemently oppose LNG and the destruction of our eco system, especially the Glass Sponges and all of the precious marine life. I vote NO to LNG.	Effect of the Project on Marine Life Glass Sponge Reefs	Thank you for your comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10). Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The	

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					Application concluded that there were no Project-related significant adverse residual effects to the environment.	
1602	March 23, 2015	Bill Clarke - Vancouver, British Columbia	The woodfibre project will benefit the whole community for many years to come, providing long term careers for the men,women and youth in the community. This will establish meaningful employment to help facilitate the raising of families to enjoy living in the traditional territory of the Squamish Nation, to keep the community strong while maintaining the evironmental stewardship of the beautiful land and sea.	LNG Project	Thank you, your comment is noted.	
1603(i)	March 23, 2015	Personal Information Withheld - North Vancouver, British Columbia	I strongly oppose the Woodfibre LNG Project; the pollution would be tragic and a tanker accident in the Sound would be devastating.	Effects of the Project on the Environment Safety	Thank you for your comments. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world. Woodfibre LNG undertook air dispersion modelling based on planned activities and equipment use — including marine vessels — to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and all predicted concentrations were below these standards and guidelines. Woodfibre LNG characterized current climate and climate trends using the Squamish Airport climate station. At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO_2e per tonne LNG, which is below the threshold of 0.16 t CO_2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act. For more information, please see: • Section 9.2.2 Human Health Risk Assessment includes an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects. • Section 5.2 Atmospheric Environment (Air Quality) of the	

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					Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. In the unlikely event there is a spill from an LNG carrier, LNG will never mix with water. Instead, it will quickly return to a gas state, and because methane is lighter than air, the gas will rise and dissipate into the air. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to the Air Quality, Public Safety, and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments	
1603(ii)	March 23, 2015	Personal Information Withheld - North Vancouver, British Columbia	We should be preserving this beautiful paradise and promoting tourism----not LNG. I often enjoy the Sound with my young kids-we swim here all the time in the summer. The marine life is amazing! Please do not allow this happen.	Tourism / Effect of Project on Marine Life	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. Section 5.10 Marine Water Quality assesses the potential Project-related effects to marine water quality. The Application concluded that there, with mitigation measures, there are no Project-related adverse effects to marine water quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15) and Marine Benthic Habitat (Section 5.16). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Woodfibre LNG Limited is of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. Please also refer to the Sustainable Economy information sheet that	

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					has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1604(i)	March 23, 2015	Lynn J. Perrin BGS MPP - Abbotsford, British Columbia	I have been travelling to Whistler since it was a small ski and tourist destination for locals. I an other British Columbia taxpayers have invested in the expansion of Whistler / Blackcomb to the global tourist destination it is today. Never once were we asked to invest in the Sea to Sky area that had an LNG plant as a tourist attraction - in fact the opposite was the case with the branding being "Super Natural British Columbia". An LNG plant and tankers were certainly not images that were included in that branding. I have been making frequent visits to Squamish for the past ten years to my daughter's home. I have had the pleasure of spending time in the Squamish Estuary and am attaching some photos of some of my visits to the Squamish Estuary and water front to remind you what is at risk if this industrial activity is allowed to proceed.	Tourism	Thank you for your comment. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1604(ii)	March 23, 2015	Lynn J. Perrin BGS MPP - Abbotsford, British Columbia	The benefits do not outweigh the risks from what I have concluded from reading the application and from recent announcements from the governments of B.C. and Canada. For instance there are very few permanent jobs for Sea to Sky residents. There is no guarantee that any of the construction employment will be filled from residents of B.C. or Canada. The Woodfibre Application Labour Market volume states that for all of BC Oil and Gas create only 0.7% of jobs http://a100.gov.bc.ca/appsdata/epic/documents/p408/d38525/1421098970302_KQQVJ0PJSG1lcH9LDD8L1J0CQhQw7NgD32kZQsvpHsxWNdyq1qCg!1378338455!1421086505978.pdf which is considerably less than tourism. The application itself mentions the need for Temporary Foreign Workers and / or skilled workers from beyond B.C.(See 6.2.1.1 and 6.2.2.1)	Employment	An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1604(iv)	March 23, 2015	Lynn J. Perrin BGS MPP - Abbotsford,	One other aspect of this application is the declining economic benefits for B.C. due to decreasing	Economic Justification of the Project	Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected	

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		British Columbia	demand in Asia. Therefore, I urge the B.C. Environmental Assessment Office to deny the Woodfibre Application.		to increase by 55%[1]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[2]. China's energy demand increases by 5% annually[3]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[4].	
1605(i)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	I write to voice my complete opposition to the proposed LNG plant in beautiful Squamish, BC. It is NOT in Canada's best interest to continue negotiations for this project. With the state of the environment as it currently is, many people (with the exception of our current government) are evolving to lessen our impacts and help the earth heal, not move towards further destruction..! The environmental implications of this project to land, air and water are unacceptable not to mention the RISKS involved. Why take risk with the already fragile environment?	Effect of the Project on Environment	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

1 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
2 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
3 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
4 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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1605(ii)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	First of all, why is Canada involving itself in helping China get off coal when Canadian industries still use coal? (ex. cement making factories…) Is it not better to take get ourselves sorted, sufficient and independent within our own environmental and energy needs before we start "helping" another country? Chinas environment is already in a dreadful state but "helping them" should not be at a cost of our own environment. We can't even take care of ourselves!	LNG Industry	Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[5]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[6]. China's energy demand increases by 5% annually[7]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[8]. A literature review of key studies of comparing emissions from natural gas and coal can be found here: http://www.capp.ca/getdoc.aspx?DocId=215278&DT=NTV Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	
1605(iii)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	To hone and risk our resources for a risky environmental project that is not transparent in many ways is unethical. The associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. I just wonder how many accidents will it take for the government and big corporations to wake up?	Safety	Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. In the unlikely event there is a spill from an LNG carrier, LNG will never mix with water. Instead, it will quickly return to a gas state, and because methane is lighter than air, the gas will rise and dissipate into the air. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety and Marine Transport information sheets	

5 Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.
6 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
7 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
8 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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1605(iv)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	I am concerned also about the outdated and damaging cooling method that the LNG is proposing to use. This method is very damaging to marine life and has been banned already in California. Why can't Canada evolve in this manner too?	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[9]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System Information Sheet that has been prepared as part of the Woodfibre LNG Limited Response to Public Comments.	
1605(v)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	I am an avid climber in Squamish. I raise my daughter there. I do not want her or me to be breathing the expected contaminates that this factory will put off. Climate change is a HUGE issue. I walk and take the bus because of this	Air Quality Climate Change	The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the	

[9] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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			reason. I do my part. The 142 000 TONNES of CO2 that this factory is proposed to emit annual is backwards. This is akin to having 6 times the amount of traffic on the sea to sky highway. Have you ever walked along the highway as it currently is? It stinks!! I can't imagine it six times worse… Barak Obama would be astounded given the state's new plan to slash's their CO2 output. Here we are up north planning to increase it… hmmm.		world. Woodfibre LNG undertook air dispersion modelling based on planned activities and equipment use — including marine vessels — to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and all predicted concentrations were below these standards and guidelines. Woodfibre LNG characterized current climate and climate trends using the Squamish Airport climate station. At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act. For more information, please see: • Section 9.2.2 Human Health Risk Assessment includes an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects. • Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

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1605(vi)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	Other concerns: the land on which the woodfiber mill has been built is unstable. Why put such a big project there when the land itself is unstable??	Project Location	Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek. • Buildings will be constructed at different elevations that correspond to their risk category in case of flooding. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. • Project components will be designed to accommodate a sea level rise of 0.5 metres.	

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1605(vii)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	I here there are very few jobs in this project for Canadians. Less than 5%. Surely there is another industry, a GREEN industry that is sustainable that can produce more than 5% with far less devastating effects. France is moving ahead with solar power. Tons of jobs there…	Employment Sustainable Economy	An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	

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1605(viii)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	Why has there not been a social-economic study done? I demand one. There is a complete lack of transparency in this project, payoffs and hypocrisy. There are baseline studies missing. I refuse to vote for the current government who continues to operate and support movement in such a fashion.	Socioeconomic Study	The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. For example, Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG Limited also has an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/) Accounting and Consulting firm MNP found the following economic benefits of the project (2014 CAD): • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than • $122.8 MILLION in GDP per year during operation. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1605(ix)	March 23, 2015	Thomasina Pidgeon - Squamish, British Columbia	I am sorry but if Squamish wants to keep its glory of being the "outdoor recreational capital of Canada", this gigantic, environmental devastating project will have to pass to the grave. thing is for certain. If this LNG goes ahead, the earth will speak back. The earth does not need people. We need the earth. But because I am of the earth and I respect it, I speak for it now. And I will continue to do so. It would be a sad day if we have to turn around and say to each other, we told them so...	LNG Project	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects.	

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					Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1606	March 23, 2015	Rick Reid - Whistler, British Columbia	Old School. Time to move on to real job creators, RENEWABLES. California has 75,000 jobs directly in solar, more than all the traditional power utilities combined! Where would a rational investor go, to a shrinking business or one with exponential growth? LNG: Carbon economy, poor job potential, minimum public gain, potential environmental disaster, fracking, . No Brainer. http://www.bloomberg.com/news/articles/2015-03-18/texas-city-pulls-plug-on-fossil-fuels-with-shift-to-solar-power Do some browsing on the subject and you will some amazing new economic facts on renewables of all types. Let's move forward, not back!	LNG Industry	Thank you for your comment. An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1607	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Build a solar and or wind farm. That I can support.	Renewable Energy	Thank you for your comment. Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[10]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

[10] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1608	March 23, 2015	Graeme Pole - Kispiox Valley, British Columbia	I oppose the proposed Woodfibre LNG project for the reasons provided below. This project is being heavily influenced by a government that is intent on establishing an LNG industry at any cost, and that now realizes that Woodfibre LNG would be the only project that might possibly break ground before the next provincial election. Both cabinet ministers who are responsible for the final approval of this project are staunch promoters of the industry. This calls into question both the likelihood of a fact-based appraisal of the project, and the impartiality of the process.	LNG Industry	Thank you for the comment. The Project has been assessed according to the methodology of both the BC *Environmental Assessment Act* and *Canadian Environmental Assessment Act (2012)*. The Province has established an LNG Strategy which is posted on its website at http://www.gov.bc.ca/ener/popt/down/liquefied_natural_gas_strategy.pdf. Woodfibre LNG Limited notes that this LNG strategy is not directed specifically to the Woodfibre Project but rather to the LNG sector.	
1608	March 23, 2015	Graeme Pole - Kispiox Valley, British Columbia	1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound.	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage...			

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			including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life			

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			Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current			

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			scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.			
1609(i)	March 23, 2015	Paul - Cordy, British Columbia	Howe sound is recovering from decades of mismanagement and industrial pollution from various sources. It is a source of pride and tourism, and matches the core values of the new ethos in Squamish. I do not support LND industrial activities in our area because of local and macroeonomic reasons. Local reasons include disruption of the oceanic environment from heavy flows of chlorinated and heated water, potentially contaminated with other substances, increased tanker traffic and potential accidents.	Seawater Cooling System Marine Transport Safety	Thank you for your comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21^{o}C or 10^{o}C above ambient water temperature of Howe	

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					Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m^3 (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time. Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L. The effects of the Project on marine water quality are assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The number of LNG carriers visiting the site will correspond to the export capacity of the Woodfibre LNG Project. The volume of LNG authorized to be exported form the Project is established by the Export License associated with the Project (Licence GL-304). Accordingly, Woodfibre LNG has estimated the number of LNG carriers visiting the site to be 40 LNG carriers per year. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours. Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites	

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					(TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG Limited has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvers at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Marine Mammals, Wildlife, Marine Transport and Public Safety information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1609(ii)	March 23, 2015	Paul - Cordy, British Columbia	Macroeconomic reasons include the volatility of the fossil fuel market, declines in value due to aggressive american production, and the high cost of transport and compression for export. The tax and labour regime has been so slackened that this project will not contribute to the economy to the degree originally promised.	Economic Justification of the Project	As LNG Projects involve significant capital investment which is recovered over a long period of time, final investment decisions (FIDs) on LNG projects are not made lightly, nor are they based on the price of oil or gas on any given day, or even a given year. Rather, FIDs are made based on long-term forecasts and take into account numerous factors, many of which are specific to the project or the proponent(s). Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[11]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[12]. China's energy demand increases by 5% annually[13]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[14]. Woodfibre LNG Limited will pay a variety of taxes, including income tax, LNG tax, and municipal property tax. Property taxes are paid on the assessed value of the facility and are independent of profit. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead. The Application includes information on the economic benefits of the Woodfibre LNG Project, should it go ahead. • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information see Section 2.6 Project Benefits of the Application.	
1609(iii)	March 23, 2015	Paul - Cordy, British Columbia	I also do not trust that the proponents will use proper safeguards for ecological integrity and human safety. The Environmental regulations of canada have been so gutted by the federal government that projects are now being developed with insufficient protections and guarantees of safety to allow them to proceed.	Regulatory Requirements	Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Project will also require a Facility Permit from the OGC as well as numerous other environmental permits. The construction and operation of the Project will be regulated by the OGC and the BC Safety Authority and Woodfibre LNG Limited anticipates that the appropriate government agencies will inspect the facility as required. Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met.	

11 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
12 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
13 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
14 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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1610	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-18.	

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			with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the			

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			benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else.			

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1611	March 23, 2015	Steve March - Gibsons, British Columbia	I would like to know when there will be an a assessment on the impact to the value on Tourism in the Howe Sound area? I have noticed that there is currently a "2015 value of tourism" report submitted by the Government of BC, however this report is on the entire province of B.C. What's required, in my view, is an assessment of the impact this project will have in the area it's affecting (Howe Sound). When can we expect a full report for the Howe Sound area?	Tourism	Thank you for your comments. Squamish is Canada's outdoor recreation capital and Woodfibre LNG intends to help keep it that way. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Woodfibre LNG Limited notes that the community committee for the Woodfibre LNG Project was created by the District of Squamish to objectively assess the Project and provide input to both Woodfibre LNG Limited and the District of Squamish. Woodfibre LNG will continue to work with the District of Squamish with regards to tourism. Woodfibre LNG is a member of Tourism Squamish and is committed to working with Tourism Squamish. Please also refer to the Marine Recreation and Sustainable Economy information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1612	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	I'm an oil and gas geophysicist, yet I do not approve or support this project at all. No to the substitution process - this project is too large and high risk. Very concerned about the impacts on other boaters, recreationalists and the wild trout.	Effects of the Project on Recreation, Fish Marine Transport	Thank you for the comment. According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments. Project-related effects to marine habitat were rated negligible, defined as not measurable. As such, no negative interaction with fishing and harvesting quantities is anticipated. Please also refer to Section 5.16 Marine Benthic Habitat and Section 5.18 Forage Fish and Other Fish for more information on the assessment of these valued components.	

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1612(ii)	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	It will substantially affect tourism, which is a much more important, long term economy for Vancouver.	Tourism	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1613(i)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	To: Environmental Assessment Office Re: Woodfibre-LNG Proposal THE BIG PICTURE: A major issue throughout the world today is the continuing concern, expressed many years ago at the UN General Assembly, that relates to the deterioration of both (a) the environment and (b) global natural resources. The Brundtland Commission examined these concerns from the point of view of "sustainable development", reporting as follows: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". It contains two key concepts: • the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and • the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." The cause of the deterioration of the environment and global natural resources (the "ecological services") can be linked to the large modern cultural demand for energy with which to sustain and expand our technological-based society. The energy requirements of human activity cannot be obtained indefinitely from the combustion of expendable, non-renewable fossil fuels (coal, oil and methane (natural gas)). The carbon dioxide "greenhouse gas" in the atmosphere implicates global warming, climate change, weather patterns as well as air and water quality and food production. Likewise, the many useful products of the petrochemical industry will also depend on the	Sustainable Development	Thank you for your comments. Natural gas is the world's cleanest burning fossil fuel, and plays an important role in reducing GHG emissions globally. However, assessing either the upstream or the downstream effects of the Project on climate change or greenhouse gas emissions is outside the scope of the environmental assessment, as defined in the section 11 order. Woodfibre LNG Limited is of the view that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[15]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

[15] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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			future availability of non-renewable carbon based fossilized reserves, a reserve not to be squandered unnecessarily and thoughtlessly by burning. Another source that informs us of the importance of conservation, prudent usage of resources, and protection of Nature is to be found in the far reaching publications of the National Audubon Society "Fight for Survival" (copyright 1990). THE LOCAL SCENE - THE WOODFIBRE-LNG PROPOSAL IN HOWE SOUND: The Woodfibre-LNG proposal raises many as yet unanswered or partially answered questions and concerns. Many of these are addressed in submissions already noted on the EAO website. These concerns are included and expanded below. I write as a retired Chemistry professor, an octogenarian, not for my age group, but to give some voice to the needs of future generations. The Environmental Assessment Office has a duty to evaluate British Columbia's and Canada's overall contribution to the challenges identified in the Brundtland Report of nearly 30 years ago, and, more recently , in the televised and published works of the Audubon Society. The perspective is very large, quite complex, but a very important one. i. Canada has made a commitment to reduce Greenhouse gases; ii. Canada needs to foster energy resource development, nationally and internationally, other than fossil fuels as prudently as possible, while transitioning to cleaner, responsible, long term sustainability; iii. Canada needs to use its own source of fuels such as natural gas as prudently as possible, in the short term at home, as a replacement wherever possible for less clean oil and coal;			
1613(ii)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	iv. the fracking operation to extract methane has a deleterious environmental impact;	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act	

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<tr><td></td><td></td><td></td><td></td><td></td><td>and related regulations.</td><td></td></tr>
<tr><td>1613(iii)</td><td>March 23, 2015</td><td>Personal Information Withheld - Lions Bay, British Columbia</td><td>v. escaping methane is many times worse than carbon dioxide as a greenhouse gas;</td><td>Greenhouse Gases</td><td>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.
Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:
<table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.
As part of Woodfibre LNG's Environmental Assessment Certificate Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.
Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the Environmental Management Act.
At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.
Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health.
Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG response to public comments.</td><td></td></tr>
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1613(iv)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	vi. there are explosion and fire hazards associated with methane (substantial information is available on the internet by googling "LNG explosions");	Safety	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments	

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1613(v)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	vii. the Woodfibre site and connecting pipelines cross danger zones associated with earthquake thrust faults that could damage the Woodfibre site and the connecting pipeline(s); viii. pipelines are prone to crack, leak at joints, and suffer from corrosion, leading to escape of methane (a serious greenhouse gas);	Seismic Hazard Pipeline	Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek. • Buildings will be constructed at different elevations that correspond to their risk category in case of flooding. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. Project components will be designed to accommodate a sea level rise of 0.5 metres. Woodfibre LNG notes that the comments about the pipeline are directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	

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1613(vi)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	ix. there are potential dangers due to increased shipping in Howe Sound, especially with very large LNG container tankers;	Marine Transport	Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments	
1613(viii)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	x. there are hazards associated with the re-fuelling of LNG tankers;	Refuelling	LNG carriers are typically duel fuel, and run on the boil off gas i.e. methane from their storage tanks. Bunker fuel is typically used only as a backup fuel, and LNG carriers on average carry between 2,000 and 3,000 tonnes of bunker fuel. All oil tanks such as fuel oil tanks and lube oil tanks are protected by double hull construction on LNG carriers. LNG carriers travelling to and from the Woodfibre LNG terminal will not be refueled with bunker fuel at the Woodfibre Terminal in Squamish or within Howe Sound. LNG carrier operators will determine a suitable and safe refueling location or anchorage for their LNG carriers subject to fuel availability and local regulations.	
1613(ix)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xi. LNG cooled to -162 degrees constantly uses refrigeration energy to be kept cold;	LNG Production Process	The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.	

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1613(x)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xii. the use of seawater for cooling purposes (banned in many other jurisdictions) is destructive to the marine environment;	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[16]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

[16] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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1613(xi)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xiii. the Howe Sound marine environment is just recovering from past industrial devastation. It is also uniquely the home of accessible living "Glass Sponge" biotherms (see Anne Casselman in National Geographic, 19 October 2013, and MLA Jordan Sturdy in the House on 23 October 2015 supporting a proposal to extend the Marine Park to include Halkett Bay in Howe Sound);	Glass Sponge Reefs Recovery of Howe Sound	The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. As part of the COC process, contaminated upland soils were remediated and the historical on-site asbestos disposal area was closed. To improve fish habitat off the Woodfibre site, approximately 4,900 m^3 (490 dump truck loads) of historic wood waste was removed from Howe Sound. This wood waste was used as structural fill in the onsite landfill. The landfill on the Woodfibre property is a permitted sanitary landfill with a leachate treatment system. Hazardous materials were, and would in future be, transported off-site and disposed of at a permitted facility. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10). Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.	

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					For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.	
1613(xii)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xiv. the potential for accidents, harm to people and harm to the environment should not simply be dismissed as the inevitable "collateral damage" of doing business and progress;	Safety	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1613(xiii)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xv. the supposed benefits (employment, financial) are unclear, vague, ambiguous or unknown;	Economic Justification of the Project	An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. Woodfibre LNG Limited will pay a variety of taxes, including income tax, LNG tax, and municipal property tax. Property taxes are paid on the assessed value of the facility and are independent of profit. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead. The Application includes information on the economic benefits of the Woodfibre LNG Project, should it go ahead. • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1613(xiv)	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	xvi. the actual division of ownership and financial control of Woodfibre-LNG/Pacific Oil & Gas/Singapore-based RGE is unknown, hence division of investments and profits is unknown; The partial list of questions and concerns given above by this author could be greatly amplified and explained. In total, they strongly suggests that a moratorium should be applied to the development of Woodfibre-LNG until or if the future is clarified.	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.	

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1614(i)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	In principle, I oppose this project because it is being considered without a long-term vision for Howe Sound. The Cumulative Effects Framework that is being defined by the Ministry of Forestry Lands and Natural Resource Operations is an assessment tool, not a comprehensive regional plan. There has been no assurance by the provincial government that the WLNG project isn't one of dozens of industries that will eventually make Howe Sound another arm of the Port of Vancouver.	Cumulative Effects	Thank you for the comments. The Province is developing a cumulative effects framework through several pilot projects; however, a framework that includes the Project area has not been developed. The Project has been assessed according to the methodology of both the BC *Environmental Assessment Act* and *Canadian Environmental Assessment Act (2012)*. Section 4.0 Environmental Assessment Methods of the Application describes the assessment process.	
1614(ii)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	If Woodfibre LNG is to be approved, then I would like the following points to be considered and questions to be clarified: 1. Water outflow at site - At the Round Table discussion on Gambier Island on March 21st., Biologists for the proponents indicated that specific ways to de-chlorinate the outgoing flow have to be worked out so that the water is at drinking-water chlorination levels. Chlorinated drinking water is poisonous to fish. Please provide more detail as to how this de-chlorination process is to be accomplished as the biologists were not clear. What type of chlorination agent(s) will be used in the pipes? Water quality monitoring is to be done by the proponent and the EAO (my understanding based on public discussion) how exactly is that to be accomplished? How will the public be assured that WLNG is monitoring itself appropriately?	Seawater Cooling System	All discharges from the Project to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The concentration of residual chlorine at the edge of the initial dilution zone will be below the Canadian Water Quality Guideline of 0.5 µg/L (CCME n.d.). The concentration of residual chlorine within the initial dilution zone cannot be acutely toxic and therefore must be 0.02 mg/L or less. Studies are currently underway regarding to determine the appropriate system, the optimal dosing, and the dosing regime (i.e., continuous vs. shock treatment). The concentrations at the discharge port (0.02 mg/L) and at the edge of the initial dilution zone (0.5 µg/L or 0.0005 mg/L) are both much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/ L. Prior to discharge, the seawater will pass through a de-aeration tank and, if required, a de-chlorination agent will be added to the water. Prior to the operation of the seawater cooling system, a waste discharge permit will be required under section 14 of the *Environmental Management Act*. This permit will establish the monitoring and reporting requirements for the system including sampling type, frequency and methodology as well as reporting format and frequency. Additional information on the seawater cooling system intake and discharge, including details on the proposed chlorination agent and types of de-chlorination processes under consideration, was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1614(iii)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	2. TERMPOL – How do the public comment on a TERMPOL report that will be published after the EAO process is over? If the public are not happy with the TERMPOL report or the requirements in it what is the process for input?	TERMPOL Review	The voluntary TERMPOL process that Woodfibre LNG will complete for the Project is a separate process from the environmental assessment process. The TERMPOL review will include a comprehensive risk assessment to ensure safety of vessel transits from terminal to open ocean; the development of recommendations to improve safety and minimize risk; and, the development of detailed safety procedures and emergency response plans. Woodfibre LNG anticipates that the TERMPOL review process will be completed in summer 2015. Woodfibre LNG has committed to implementing all recommendations from the TERMPOL review process.	
1614(iv)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	3. Shipping - Daytime/nighttime navigation – Where and how far off shore are the tankers to be held if they have to wait to come into Howe Sound? Sound and light pollution is a serious	Noise / Light	LNG carriers may travel through Howe Sound at any time of day or night. The LNG carriers will be held in the open Pacific if they are delayed in	

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			quality of life issue around freighters and tankers as they wait for berth space at Lower Mainland port facilities. This is experienced in several southern gulf island communities. Also, please provide mitigation details for noise and light while tankers are traversing Howe Sound at night.		entering Howe Sound. Accordingly, there will not be Project-related effects to light or noise associated with LNG carriers holding within Howe Sound. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours. Section 5.4 Atmospheric Sound of the Application assesses the potential Project-related effects to sound and includes the mitigation measures. The Application concluded there were no significant adverse effects. At a distance of approximately 500 m from the LNG carrier, the sound level is less than 35 dBA, which is equivalent to a soft whisper at 2 m. At a distance of less than 200 m from the LNG carrier, the sound level is less than 40 dBA, which is equivalent to a quiet living room (see Table 5.4-5 of the Application). Section 5.5 Light of the Application assesses the potential Project-related effects to light (sky glow and light trespass) and includes the mitigation measures. The Application concluded that there were no significant adverse effects.	
1614(v)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	4. Fuel - Would like to see a condition that all tankers be dual or "triple fueled" I think it's called, and that they will not be re-fueled with anything other than natural gas while they are in Howe Sound.	Refuelling	LNG carriers are typically duel fuel, and run on the boil off gas i.e. methane from their storage tanks. Bunker fuel is typically used only as a backup fuel, and LNG carriers on average carry between 2,000 and 3,000 tonnes of bunker fuel. All oil tanks such as fuel oil tanks and lube oil tanks are protected by double hull construction on LNG carriers. LNG carriers travelling to and from the Woodfibre LNG terminal will not be refueled with bunker fuel at the Woodfibre Terminal in Squamish or within Howe Sound. LNG carrier operators will determine a suitable and safe refueling location or anchorage for their LNG carriers subject to fuel availability and local regulations.	
1614(vi)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	5. Tug boat activity - There has been much discussion about wave energy/height from the LNG tankers but what about wash from the tugs? What is the process for redress for waterfront land owners if their docks, floats etc are impacted by the proposed tanker route?	Wakes	As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Indirect wake effects from shipping activities were considered in the assessment (Section 7.3.3.2.1 Potential Interactions) and, based on the analysis by Moffatt & Nichol, the potential wake effects were determined to be negligible (i.e., they would not have a measurable change). For more information on the Vessel Wake Assessment, please see Appendix 7.3-2 of the Application. Additional information on the vessel wakes was provided to the EAO on April 23, 2015.	
1614(vii)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	6. Islands Trust – The Islands Trust is a provincially mandated (see Islands Trust Act) planning authority that works in cooperation with	Islands Trust	The EAO included the Islands Trust in the Woodfibre LNG Project's Working Group. Woodfibre LNG Limited was pleased to receive and respond to Islands Trust comments through the Working Group	

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			municipalities, regional districts and provincial ministries to ensure that the scale, rate and type of human development is in balance with the maintenance of healthy ecosystems and rural communities. The majority of Howe Sound is within the Islands Trust – namely the Gambier Island Local Trust Area and the Municipality of Bowen Island. Both bodies zone into the marine area. Please provide supporting actions to acknowledge the Islands Trust mandate and policy statement in your overall project		process.	
1614(viii)	March 23, 2015	Kate-Louise Stamford - Gambier Island, British Columbia	7. Amenity Condition - acknowledgement by the proponent that there is no benefit - and only disadvantages of this project to the recreational communities outside of Squamish in the Howe Sound area. This acknowledgement could come in the way of an "amenity" to the region such as a dedicated marine rescue vessel or some such community benefit. This is by no means an exhaustive list of questions and concerns that I have so I look forward to seeing the responses to other comments.	Amenity Condition	Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects.	

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1615	March 23, 2015	Personal Information Withheld - West Vancouver, British Columbia	I believe the Woodfibre LNG project is in the public interest, and ought to proceed. My reasons are as follows: 1. Our existing export market for our natural gas is the United States, and they increasingly will not need Canada's natural gas exports. It is imperative we develop new export markets, and that is what Woodfibre LNG seeks to do. 2. Natural gas production, transportation and export has been carried out in BC for almost 60 years. While liquefaction is a new feature, all other elements of the delivery chain represent activities long carried out in BC, and carried out safely and responsibly. 3. Woodfibre LNG is taking advantage of new small-scale technology that is creating opportunities like this around the world. The technology is safe, and when combined with their plan to use electricity at their plant site, will be environmentally attractive as well. 4. The site they have chosen appears to be a very good one. It has been home to industrial activity since the early 1900's and through Woodfibre LNG's efforts, the site is being substantially rehabilitated. A clean LNG export facility will be a substantive upgrade to its former industrial use. 5. The site has a deep-water port and a history of marine transport useage. The relatively infrequent LNG carrier voyages required to service the site will be readily accommodated within existing shipping lanes, and have been safely done world-wide since 1959. 6. Woodfibre LNG is reaching out to First Nations and the communities. They appear to be focussing considerable efforts on being a good corporate citizen. We should encourage, not discourage, efforts like this. 7. Lastly, BC needs the 650 jobs to be created during the project's construction and the ongoing 100 jobs while in operation. And unseen will be the jobs sustained in the upstream transportation, processing and production sectors that will ensure the natural gas is available. On top of this will be an expected $85 million per year in tax revenues to the various levels of government. We can't afford to ignore the positive economic contributions of this project. Thank you for the opportunity to comment.	LNG Project	Thank you, your comment is noted.	

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1616	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I think you will find that this is a dine deal and the Govt. Doesn't care what you have to say especial when more jobs are at stake	LNG Project	Thank you for the comment. Woodfibre LNG understands that both the federal and provincial environmental assessment processes are substantive processes to evaluate the potential impact of a project on the environment, to ensure that the project has been well-conceived given consideration to alternative designs and input from government agencies, regulators, municipalities and First Nations, as well as the public, and to ensure that appropriate mitigation strategies are in place to manage any such impacts. As a proponent, Woodfibre LNG takes this process seriously. Woodfibre LNG has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page. A public consultation report will be filed with the EAO in accordance with the environmental assessment (EA) process. In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world. Public participation in the EA process helps to ensure that community values and public goals for community development are considered in project planning and decision-making.	
1617(i)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	Letter addressed to Michael Shepard attached 21 Mar 2015 Michael Shepard, Environmental Assessment Office PO Box 9426 Stn Prov Govt Victoria, BC V8W 9V1 Dear Mr Shepard; WOODFIBRE LNG UNACCEPTABLE I am a 3rd generation Vancouverite, a West Van resident, and long time owner of Mickey Island in West Howe Sound. The sea has been my love and profession since the late 1940s. From my study of LNG documentation, attendance at LNG presentations, seminars and public meetings in West Van (4 locations), Squamish (twice), and on Bowen Island, I write to express my very strong opposition to Woodfibre LNG. This ill-conceived, extremely dangerous project, packaged in a web of distorted truths, omitted pertinent facts and outright lies is being heavily promoted by an industry/BC Government alliance calculated to convince British Columbians that Woodfibre is a prime terminal site and that Howe Sound offers plenty of room safely to accommodate LNG tanker traffic. TERMINAL SUITABILITY The Society of International Tanker and Terminal	LNG Project	Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites). It's also important to know that Howe Sound has been an established shipping route for more than a century, and that it is well suited for the movement of LNG. LNG facilities are very safe and it is not uncommon for them to be located near major population centres. For example, there are LNG facilities located in Tokyo Bay, Boston Harbor and Barcelona. Closer to home, LNG has been produced on Tilbury Island in Delta within approximately 300 m of commercial and industrial businesses since 1971. The Woodfibre Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. The Project site is located 7 kilometres from downtown Squamish. Although SIGTTO's Site Selection and Design Guidelines for LNG Ports and Jetties recommend port designers to construct LNG jetties in a location suitably distant from centres of populations, they do not define a minimum distance, rather promote that acceptable proximity	

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			Operators (SIGTTO), headquarters in London, is the de facto world authority on LNG terminal siting standards. Virtually the entire world LNG industry has membership in SIGTTO. Woodfibre does not. Based on the indisputable criterion that there is no such thing as an acceptable probability of a catastrophic LNG release, SIGTTO has developed a number of standards for the safe siting of an LNG terminal: * Where vapours from a spill cannot affect civilians; * Far from the ship transit fairway; * Not to conflict with other waterway users (commercial, ferries, tugs, fishing, recreation etc); *Avoid narrow inland waterways due to greater navigational risk; *Not on an outside curve in the waterway, and *Always keep human fallibility in mind. Woodfibre, on the outside curve near the head of a long, narrow, navigationally tricky, busy, well populated inland waterway, fails to meet a single one of the SIGTTO siting standards, so is therefore entirely unsuitable as an LNG terminal site. That being the case, no wonder Woodfibre is not a SIGTTO member! My real concern is the BC Government's abrogation of its duty to protect British Columbians by failing from the outset to prohibit LNG traffic in Howe Sound. Instead Premier Clark has chosen to rely upon the clearly pro — LNG think tank Resource Works, whose executive director Stewart Muir has opined that we cannot have Health Care without LNG development, and other mouthpieces such as BC Chamber of Shipping president Capt. Stephen Brown and ex-politician/Buy BC LNG Advocate Gordon Wilson to get her LNG message out. Such arrogant disregard for all the standards of the LNG industry is unconscionable. It places the lives of several thousand British Columbians in jeopardy.		to adjacent shipping berths and other traffic is likely to be a matter for local determination in the specific circumstances of a particular location. SIGTTO continues to say if site selection of LNG jetties includes static and dynamic mooring analysis plus the collection of site specific wind and wave data to promote safe berthing of LNG carriers, any such location risk is vastly reduced. While the Woodfibre LNG Project is in compliance with SIGTTO guidelines, it is interesting to note that SIGTTO provides further commentary on site selection as follows. Invariably, and especially for receiving terminals located in developed port areas, the site selection process is formed by many considerations other than the risk implications for LNG carrier operations. Availability of suitable land for the installation and the effects of associated local planning laws, constraints arising from the infrastructure of gas distribution and usage from the terminal and many other factors will weigh heavily in the process, not least constraints of acceptable cost. Therefore, comprising some or all of the principle criteria for site selection is often unavoidable; these recommendations are basic guidelines to prompt special enquiries into particular aspects. Furthermore, the actual values quoted together with their risk reduction effect, still depend on local conditions which have to be assessed individually port by port. SIGTTO recommends that the jetty of an LNG Terminal should be chosen to reduce the risk of passing ships striking a berthed LNG carrier. As an example, which SIGTTO acknowledges is subjective, it recommends that if an LNG jetty is to be located within a river it should not be located on the outside of the river bend. This is because at some point on that river bend the manoeuvring vessel will head directly at the berthed LNG carrier and therefore raises the risk that the maneuvering vessel could strike the berthed LNG carrier if its manoeuvre is improperly executed. Howe Sound is not a river, nor is it a narrow channel and large vessels do not navigate in the vicinity of the Woodfibre LNG terminal. The width of Howe Sound measured from the front of the facility to Darrell Bay is approximately 5.2 km. Large vessels that head to and from Squamish Terminals have their route almost parallel to vessels destined to the Woodfibre LNG terminal and never during their navigational route are headed on a course towards the Woodfibre LNG terminal jetty . Therefore any mis-manoeuvre or improper navigation on these vessels will not risk the LNG carrier berthed at the Woodfibre LNG Terminal. This makes the Woodfibre site an ideal location for siting an LNG jetty that fully complies with the safeguards noted within the SIGTTO standards document. Woodfibre LNG Limited is committed to membership in SIGTTO; however, the operation of an LNG carrier or terminal is a prerequisite to membership.	

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1617(ii)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	NARROW PASSAGES The upper reaches of Howe Sound are about 2700 m wide. The outbound channel narrows to 1600m east of Anvil I. Thereafter ships proceeding down Queen Charlotte Channel east of Bowen I. are restricted between Bowen and Bowyer I.(2400m), Bowen and West Van(2050m), and at Passage I.(2450m), or, if down Collingwood Channel west of Bowen, between Bowen and Gambier I.(1900m), Keats I.(2100m), Ragged I.(1500m), Mickey I.(1600m), and Worlcombe I.(1700m). The most westerly course through Barfleur Passage narrows to less than 1500m both between Ragged and Keats and between Hermit and Preston islands. Dr. Mike Hightower, a world renowned expert on LNG tanker operations at Sandia International Laboratories, has defined for the US Department of Energy three hazard zones of 500m, 1600m (1 mile) and 3500m surrounding LNG tankers. The largest zone represents the minimum safe separation between tanker and people. Other LNG hazard experts have indicated that 4800m (3miles) or more is a more realistic hazard separation distance. In this context it is worth remembering that the heat stored in a 50,000 tonne cargo of LNG is equivalent to five dozen Hiroshima atomic bombs. Clearly the minimum 3500m civilian hazard zone extends at least 2 km beyond each side of all these restricted passages. Virtually the entire Sea to Sky highway from Britannia to Lighthouse Park, Anvil, southeast Gambier, Bowyer, eastern Keats, Bowen, and all islands of the Pasley group fall within the zone. Furthermore, from Britannia to Porteau Cove, Bowyer, White Cliff, both coasts of Bowen and eastern Pasley group are also within the much more dangerous 1600m zone. Howe Sound is no place for LNG tankers!	Marine Transport Safety	Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel. The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG Limited has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvers at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site	

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1617(iii)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	WAKE AND SURGE At the 29 Jan Caulfeild LNG Public Forum a marine expert who identified himself as an `unlimited master' assured me that the wave height from an LNG tanker moving at 8 knots would be no more than 10cm measured at 50m from the ship. I found that not believable. When I asked him what would be the sea level rise as the ship passed at 8 to 10 knots he had no answer. An LNG tanker displacing, say, 150,000 tonnes has a submerged volume of about 150,000 cubic metres of seawater, (same volume as the Wall Centre Tower in downtown Vancouver, 1000sq m footprint x 150m high). Drive that ship past the West Van shore at 10 knots and not only will there be a measurable hump of water pushed ahead of it, but also half that volume of seawater (75,000 cu m) is displaced towards the viewer as the ship passes, then it retreats to fill the vacated space. My question was how far would it surge up the beaches, into the marinas etc? I believe it would be measurable and very problematic.	Wake	As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Indirect wake effects from shipping activities were considered in the assessment (Section 7.3.3.2.1 Potential Interactions) and, based on the analysis by Moffatt & Nichol, the potential wake effects were determined to be negligible (i.e., they would not have a measurable change). For more information on the Vessel Wake Assessment, please see Appendix 7.3-2 of the Application. Additional information on the vessel wakes was provided to the EAO on April 23, 2015.	
1617(iv)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	STOPPING DISTANCE I asked the same expert to tell me the stopping distance for a loaded LNG tanker. He said "the boat (sic) can stop from a speed of 8 knots in its own length". That was a really deceitful answer. The only way to achieve such a short stop would be with the aid of one or a pair 6,000 horsepower tugs pulling hard in the reverse direction.	Marine Transport	Subject to recommendations of the Pacific Pilotage Authority and conduct of passage by BC Coast Pilots, LNG carriers will proceed at a reduced speed of between 8 to 10 knots within Howe Sound. With a tug tethered at the stern and utilizing the engines in reverse propulsion, the LNG carrier can be stopped within 450 to 600 meters from a propelled speed of 8 to 10 knots. The utilization of the additional two escort tugs will further reduce this stopping distance significantly.	
1617(v)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	TRAFFIC CONFLICT BC Ferries cross Queen Charlotte Channel 52 times daily on the Horseshoe Bay —Bowen and — Langdale routes, and make another 16 transits past Passage Island on the Nanaimo route. This equates to 4 passages per hour during daytime, a level of service which is bound to increase in years ahead. On tanker days (twice a week?), mandatory exclusion zones would overlay an entirely new class of dangerous cargo designations — broad reaching yet unavoidably vague as to location and timing — upon all posted sailing schedules. All other Howe Sound marine traffic would be similarly affected. Such wholesale disruption to the daily routine of Howe Sound residents and ferry passengers would not be tolerated and must not happen.	Effect of the Project on Marine Transport	The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours. An assessment of the effect of the LNG carriers on other marine traffic is included in Section 7.3 Marine Transport of the Application. BC Ferries has not identified scheduling delays or interruptions as a potential effect. Following detailed discussions with BC Ferries, Pacific Pilotage Authority and BC Coast Pilots, it has been determined that there will be no serious effect to BC Ferries when sharing the waterway near Horseshoe Bay with LNG carriers. Coordination with these vessels will follow normal communication protocols under the Marine Communication and Traffic Services (MCTS). Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. Representatives from BC Ferries were also part of the HAZID identification workshop for TERMPOL.	

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1617(vi)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	ONCE- THROUGH- COOLING The intended cooling system for the liquefaction plant would return to Howe Sound 17,000 tonnes per hour of chlorinated seawater at 10 degrees centigrade warmer than the intake temperature. That's 408,000 tonnes daily, almost 3 million per week. The brochure states that the spent coolant will be only 1 degree above intake temperature (measured 10m from the discharge outlet). Though clearly intended to deceive the public, that statement is not so blatantly misleading as is the intentionally omitted fact that once-through-cooling is an outdated technology which has been prohibited in California since 2010 because of the enormous damage it was doing to the marine ecosystem over hundreds of square miles of coastal waters.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[17]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

[17] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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1617(vii)	March 23, 2015	Roger Sweeny - West Vancouver, British Columbia	Howe Sound is recovering at last from the disastrous pollution caused by the Britannia Mine and the Port Mellon and Woodfibre mills long ago. The blackfish, dolphins and herring of my youth are coming back; hopefully the salmon will too, some day. Surely this lovely body of water does not deserve — nor might it survive - another such kick in the teeth. SUMMARY It is my conclusion that Sandia's 'No acceptable probability of a catastrophic LNG release' criterion, together with the mindboggling heat lurking in an LNG cargo, and the ever- presence of human fallibility (also described as HPTFTU — the Human Proclivity To Foul Things Up), create an impending tragedy when applied to Howe Sound's narrow waters. Woodfibre LNG must not go forward. It is essential that Premier Clark be warned of her recklessly unwise decision, and that she take immediate steps to prohibit LNG tanker traffic in Howe Sound. Yours sincerely, Roger Sweeny Cert. of Service as Master Foreign Going, Master Home Trade Commander RCN ret.	Effects of the Project on the Environment Industrial Legacy	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1618	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	please don't go through with this,we only have one planet,we have to protect it while we can,cause it's all we got,the there ain't no more!!you can't eat or drink money!!	Effect of the Project on Environment	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1619(i)	March 23, 2015	C.J. Leona Wilson Ridley - Skidegate, British Columbia	I would like to know the impact LNG will have on the Fresh drinking water, and the affects it will have on pumping back into the ocean.....	Water Quality	Woodfibre LNG Limited does not anticipate effects to drinking water from the Project. For more information regarding Project-related effects to surface water quality, please see Section 5.8 of the Application. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1619(ii)	March 23, 2015	C.J. Leona Wilson Ridley - Skidegate, British Columbia	With the many changes Harper has put in, in regards to the environment. You say this will supply many jobs? Jobs for who? Many citizens that have resided in Prince Rupert, who have worked in Long shoring for the past 50 years, to have the canneries bought out, jobs sent out, but what i see when i go to Prince Rupert are all workers from Ontario, Alberta plates that reside in the Hotels and Motels, the flaggers in the area are not utilized, all transient workers.	Employment	From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the	

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					maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/) An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1619(iii)	March 23, 2015	C.J. Leona Wilson Ridley - Skidegate, British Columbia	the impact is also in rental units :(the ones who have held Prince Rupert in tact since the Logging and Fishery has done a major dive, like oil is doing right now, and they are not even thought of as these huge projects are going forward. Who knew that in order to get in, you need to find a Union to join to get a better change to get hired. This Land has been feeding us for many moons, we need that rich fabulous food for our bodies, that is our medicine from the ocean and land. We cherish what is left of the Forest and the Ocean. Pictures will not feed future generations, and only the rich will have clean drinking water. We do not want to be another 3rd world country, where you dump your waste and famine takes over, we have already been there, and we survived, with many stories to tell. Thank you for reading my concerns.	Jobs	Woodfibre LNG Limited has committed to carrying out an Economic Impact Study to gain a deeper understanding of how the Project may affect the economy. The scope of this study will developed in conjunction with the District of Squamish. The supply and demand of housing (including cost) is addressed as part of the Application, in Section 7.2 Infrastructure and Community Services. The assessment determined that the effect to the housing and accommodation sub-component is expected to be negligible. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse	

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					residual effects to the environment.	
1620	March 23, 2015	Terry Beck - Surrey, British Columbia	I think from a Global perspective this LNG plant will help in converting the third world coal electric plants to clean LNG plants. This would help world pollution and would give employment for Squamish area.	LNG Project	Thank you, your comment is noted.	
1621(i)	March 23, 2015	Tony Richardson - Squamish, British Columbia	I live in squamish and am very concerned and deeply opposed to the LNG plant proposed to be installed just a few kilometres from my home. My primary concerns are environmental as they are most obvious and tangible.	Effect of the Project on Environment	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1621(ii)	March 23, 2015	Tony Richardson - Squamish, British Columbia	I am also concerned about the lack of financial and employment be fits that will come with the high cost to our environment not to mention the visual impact to an area only now recovering from a long history of resource extraction. Please do not allow this project to proceed.	Employment Visual Quality	An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services. The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the regional assessment area. Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible. Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following: • reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours • monitoring and maintaining natural screening to ensure minimal visibility of infrastructure • providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola.	
1622	March 23, 2015	Personal Information Withheld - West Vancouver, British Columbia	Multiple environmental, health, safety, and economic issues have been presented. My main concern at this point is which people and what values will be respected when decisions are made?	EA Process	Thank you for your comment. Public participation in the Environmental Assessment (EA) process helps to ensure that community values and public goals for community development are considered in project planning and decision-making.	
1623	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	If Woodfibre LNG, through the EAO process, can demonstrate the facility can be operated safely and any environmental impacts will be minimized, then the project should be permitted and allowed to proceed.	LNG Project	Thank you, your comment is noted.	

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1624	March 23, 2015	Personal Information Withheld - Powell River, British Columbia	1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			(SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's			

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			environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds,			

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			marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley			

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			airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.			
1625(i)	March 23, 2015	Terri Brown - Lions Bay, British Columbia	Please do not ignore the risk to the Glass Sponge Reefs that has come to light and details have been sent to you by many scientists.	Glass Sponge Reefs	Thank you for the comment. Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10). Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine	

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					Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.	
1625(ii)	March 23, 2015	Terri Brown - Lions Bay, British Columbia	It is also unprecedented in the WORLD that an area such as Howe Sound could be cleaned up at millions of tax payer dollars over many years and then allowed (or even considered) for a re-industrialization of any kind. This area is more suitable to recreational use due to it's proximity to Vancouver and other populated areas as well as it's outstanding natural beauty. Please carefully consider ALL the risks before you give this the green light, as once we go down this path, there will be no turning back and shutting the door on future proposals will be even more difficult. The line must be drawn firmly in the sand now, that this kind of activity is simply not appropriate on so many levels for Howe Sound. For the paltry few jobs that might be gained here, there will be many more that will be lost in the burgeoning Eco-Tourism area, not to mention fishing.	Recovery of Howe Sound	The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). Woodfibre LNG Limited is of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1625(iii)	March 23, 2015	Terri Brown - Lions Bay, British Columbia	Do not fall for the misleading information being put forth by the proponent, as it is very unscientific, biased and in many cases downright false. Not to mention that polls consistently show that 80%+ of British Columbians do not want any part of pipelines and tankers in BC. For sure you will have people in the streets, and rightly so, if you ignore the will of the people of this province. People are not stupid and you can only pull the wool over their eyes for so long, before you wake the sleeping giant. Our Premier, sadly, is no longer listening to not only the majority of British Columbians, but is in fact, compromised in her own integrity by embracing an essentially corrupt corporation that has been fined millions of dollars for the systemic illegal business and tax evasion practises. The people of this Province deserve better and there are certainly better partners out there in the world, if there is a more appropriate site for an LNG facility to be built in the coming years. People who oppose this are not a bunch of "nimbys". There are many good reasons why this project should not go forward and they have been eloquently pointed out to you by many before me, so no point in covering old ground. Suffice to say, that it is wrong, at so many levels, that it is simply staggering that it would have gotten this far. I will wait with anxious anticipation to see if my comments have been published in full, as I have tried to be factual, truthful and respectful of the process. Sincerely, Terri Brown, Lions Bay BC	LNG Industry	The Project has been assessed according to the methodology of both the BC *Environmental Assessment Act* and *Canadian Environmental Assessment Act (2012)*. Woodfibre LNG understands that both the federal and provincial environmental assessment processes are substantive processes to evaluate the potential impact of a project on the environment, to ensure that the project has been well-conceived given consideration to alternative designs and input from government agencies, regulators, municipalities and First Nations, as well as the public, and to ensure that appropriate mitigation strategies are in place to manage any such impacts. As a proponent, Woodfibre LNG takes this process seriously. Woodfibre LNG has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page. A public consultation report will be filed with the EAO in accordance with the environmental assessment (EA) process. In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world. Public participation in the EA process helps to ensure that community values and public goals for community development are considered in project planning and decision-making.	
1626	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	No we don't want it!!!! Do not destroy our land!!!!	LNG Project	Thank you for the comment. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1627	March 23, 2015	Bryan Kent - Squamish, British Columbia	We have so many green choices for our energy needs today, I dont think we should be supplying China with our dirty, fracked natural gas for corporate profit.	LNG Industry	Thank you for the comment. Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[18].	

[18] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1628	March 23, 2015	Sheila Sovereign - Squamish, British Columbia	I have lived in Squamish since 1992 and have watched it transform itself into the vibrant and diverse and healthy town that it now is. I still see so much potential for growth and creative development. Squamish is doing just fine without this LNG project. We simply do not need it and I am convinced it will undo many of the amazing opportunities currently taking place. This is a special ecosystem and a very unique community. We can do better. We can thrive and excel without this type of diversity. I am HEAVILY opposed to any LNG projects in the Howe Sound area. Thank you for hearing my concerns.	LNG Project	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy of the Application. The Application concluded that there were no Project-related significant adverse residual effects to the economy. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1629	March 23, 2015	Personal Information Withheld - Surrey, British Columbia	The risk is too great; the negative impact on land and all living things too great -- we need to be better stewards of our energy use and find enviro and human friendly alternatives.	Effect of the Project on Environment	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1630(i)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I am totally against the proposed Woodfibre LNG project for Howe Sound on all levels--the shipment of fracked gas with all the environmental concerns associated with its extraction; the risk to Howe Sound with thousands of Litres of heated ,clorinated water being dumped back into the Sound daily as part of the LNG cooling process; the 24" gas pipeline running thru Squamish,under the Estuary and Squamish River,with a compressor station in the Industrial Park . Many other countries world wide are banning fracking because of the contamination of fresh water supplies.	Hydraulic Fracturing Seawater Cooling System Pipeline	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations. Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html All discharges from the Woodfibre LNG Project to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1630(ii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Howe Sound is slowly being restored to health with the return of the herring,dolphins,whales, salmon - thats more important than a short term LNG project. I hope our local & Provincial leaders have the courage & foresight to deny the permit. Howe Sound must be protected as a resource, in the same way as the Provincial & National Parks were established decades ago by political leaders with vision.	Recovery of Howe Sound	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. An assessment of the potential effects of the Project on marine mammals is included in the Application (Section 5.19. The assessment indicated that noise from pile driving (during construction) and vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the Project area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time. Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1631	March 23, 2015	Chantal Robert - Ontario	I lived in Squamish for nearly 5 years and hope to one day return to how I left it! We can all see the signs that Howe Sound is healing! Porpoises returning with Whales!!! There are clean energy options!! We all must think to the future and act responsibly for our children and the animals we share this beautiful country with who don't get a vote. If this project goes forward we as man are only taking steps backward. There are so many horrible environmental messes to date to prove that clean energy and sustained biodiversity are where we need to be placing our concern. The economy can be sustained in better ways.	Recovery of Howe Sound	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and ecosystem restoration in the Project area once the property sale is complete. Plans for additional remediation include the removal of approximately 3000 existing creosote-coated piles from the waterfront in the Project area, the creation of a Green Zone around Mill Creek, and the containment and closure of the on-site landfill. This work will be carried out in partnership with the local Streamkeepers Society and other relevant groups, where suitable so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. An assessment of the potential effects of the Project on marine mammals is included in the Application (Section 5.19. The assessment indicated that noise from pile driving (during construction) and vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for	

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					both underwater sound levels and mammal presence in the Project area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time. Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1632	March 23, 2015	Malene Hansen - Bowen Island, British Columbia	I strongly oppose any economic or other invasive project that is not in the absolute higher and best interest of that region, habitat, and the native earthlings. We know better and must act better for all our sakes.	LNG Project	Thank you for the comment.	
1633	March 23, 2015	Personal Information Withheld - Surrey, British Columbia	1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas,	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as			

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			well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of			

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			Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma			

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			symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma. Squamish is increasingly a destination for world class tourism, which is less destructive of the environment. An LNG plant in Howe Sound would make it less desirable for that. Why disregard something that is already contributing to the economny, for something that is so dubious, both economically and environmentally.			

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1634(i)	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	After closing Brittania Mine and a pulp mill in this area, Howe Sound is showing signs of a magnificent recovery that includes the return of the herring, orca, and dolphins. The marine ecosystem has been restored, after years of tailings and pollution that destroyed the fish and aquatic plantlife upon which the Howe Sound marine ecosystem depends. What are you thinking?	Recovery of Howe Sound	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and ecosystem restoration in the Project area once the property sale is complete. Plans for additional remediation include the removal of approximately 3000 existing creosote-coated piles from the waterfront in the Project area, the creation of a Green Zone around Mill Creek, and the containment and closure of the on-site landfill. This work will be carried out in partnership with the local Streamkeepers Society and other relevant groups, where suitable so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. An assessment of the potential effects of the Project on marine mammals is included in the Application (Section 5.19. The assessment indicated that noise from pile driving (during construction) and vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the Project	

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					area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time. Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1634(ii)	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	Pipelines are not clean. Ask the residents of Burnaby how many clean-up operations and water restrictions they've been put through since Kinder Morgan became their neighbour. You are going to destroy this ecosystem all over again, and hasten the demise of this planet. Do not proceed in favour of the pipeline. Do not seek a different route for your pipeline. If you must proceed with an environmental assessment, conduct no fewer than five independent assessments not funded by Woodfibre LNG or its affiliates. The ecological economy of Howe Sound, and indeed of any part of the planet, is far more valuable in the long and short-term than the weak political economy of sacrificing our environment for oil money. Infrastructure begins with our environment, and this pipeline threatens the health and survival of us all.	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	
1635	March 23, 2015	Gary Weilinger - Calgary, Alberta	British Columbians have derived significant benefits from the development of a well-established natural gas resource sector since the 1950's. Those benefits include for example, natural gas exploration, production, processing and pipeline infrastructure that ensures safe and reliable uninterrupted supply and delivery throughout the province; a stable tax base along with royalty revenues that underpin many of the social services that British Columbians have relied upon to enhance the quality of life in the province for more than a generation; a regulatory regime that ensures ongoing sustainable resource development, and skilled jobs that attract families to a vibrant industry to support future generations (just to name a few.) Within the last 5-10 years however, the market dynamics in North America (and globally) have changed dramatically. While northeast BC and northwest Alberta have a world scale natural gas resource base (of a scale and scope the equivalent of meeting the energy needs of every Canadian home for the next 8,100 years,) our access to growing markets in North America is in significant decline. Simply having the resource in the ground is of no benefit to the province unless there is actual development of the supply; infrastructure to move it to market; and the ability to compete globally in exporting the resource by developing access to emerging economies. Our largest trading partner has become our largest competitor. US natural gas resource development has grown at a much greater rate than in Canada, and in the northeastern US alone, current production rates	LNG Project	Thank you, your comment is noted.	

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			exceed those of all of Canada combined. A highly integrated natural gas transmission system in North America now sees all traditional flow patterns undergoing a dramatic change, and our BC resources (located the greatest distance away from any demand/load centre) are quickly becoming redundant. In order for Canada and BC to continue to realize the existing benefits of a healthy natural gas sector, access to new markets for BC natural gas is an imperative. I support the proposal by Woodfibre LNG to build the new and necessary infrastructure for all of BC to continue to benefit from the development of natural gas resources. This project will access BC natural gas supply to better utilize existing pipeline infrastructure at a pre-existing industrial site to gain much needed market access to support the BC economy for the benefit of the province as a whole. BC has demonstrated the ability to develop natural gas resources in a safe, reliable, economically and socially sustainable manner, and will ensure this project complies with the expectations of all British Columbians as has been the case for decades. BC has a proven track record of sustainable development in this industry. It is my view that his project this project should be approved to proceed.			
1636	March 23, 2015	Personal Information Withheld - , British Columbia	I am opposed to this project based on the negative impacts far outweighing the benefits. There is no guarantee that there would not be a significant negative effect on Howe Sound, fish and wildlife, the surrounding area and therefor humans. There are no reasons other than greed and partisan politics to pursue this project and I believe it needs to stop now before any more money or effort is spent. It is a farce that a private company is backed by a government (and deceiving marketing) to profit from the destruction of our habitat under the guise of bettering the economy and employing a few people to do this dirty work and and that nothing can or should be done to stop it. Hopefully this helps. Please stop it.	Project Benefits	Thank you for the comment. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met. The Project will also require a Facility Permit, Leave to Commence Construction and Leave to Operate from the Oil and Gas Commission (OGC) as well as numerous other environmental permits. The OGC will continue to regulate the Project throughout its life. The OGC will not issue the Facility Permit or Leave to Construct without first satisfying itself that Woodfibre LNG has been designed in accordance with the relevant codes and standards.	

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1637	March 23, 2015	Jennifer - Lions Bay, British Columbia	We say NO to LNG tankers in Halkett Bay!!! Save our Sound and all the delicate environmental systems that exist!, like the 9000 yr old glass sponge reef that the tankers will be bulldozing through because they haven't enough clearance! No to LNG! http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/	Glass Sponge Reef	Thank you for your comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the glass sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. The glass sponge reefs are located at depths ranging between 20 m and 40 m at these locations. Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1638	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	11.ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 13, 21, and 46.	

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1639	March 23, 2015	Dee-Ann LeBlanc - Garibaldi Highlands, British Columbia	I have numerous concerns about this project. The big one is: CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general.	Climate Change	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 16.	
1640	March 23, 2015	Victoria Rogers - Lions Bay, British Columbia	If the "once through" sea water cooling system is banned in California due to its harmful impact on marine life, why is this method being considered in the Woodfibre LNG project? Shouldn't we only consider this project when it offers the safest , scientifically known cooling system available to man , to protect our marine habitat for the future of the planet?	Seawater Cooling System	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[19]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included	

[19] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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					in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System Information Sheet that has been prepared as part of the Woodfibre LNG Limited Response to Public Comments.	
1641	March 23, 2015	Personal Information Withheld - New Westminster, British Columbia	The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic.	SIGTTO Standards	Thank you for the comment. Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel. The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG Limited has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvers at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site	
1642	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I am extremely concerned about the impact of Woodfibre LNG project on the quality of life in Squamish and strongly oppose it. I have lived and owned a home in Squamish for	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			the past seven years, and it is the place where I expect to stay -- the potential for Woodfibre LNG has made me seriously question that. My partner and I moved here to take advantage of the outdoors -- he's a triathlete and I'm a marathon runner -- and Woodfibre LNG would change this area beyond recognition. We came and stayed here because it is the Outdoor Recreation Capital of Canada. My concerns include: 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of			

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			increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the			

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			geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is			

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			proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation			

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			rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.			
1643	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound?	Employment	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 15.	

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1644	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Hi, Being a resident of Squamish with a family, I have lots of concerns about the Woodfibre LNG project. My main concerns are: 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, 46.	

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1645	March 23, 2015	Wendy Jones - Vancouver, British Columbia	9000 year old glass sponge reefs endangered by tanker traffic LNG tankers do not have enough clearance to get over the 9000 year old reef if they go off course. These 9000 year old glass sponge reefs have been called "Living Fossils" by National Geographic as until recently this species was thought to have gone extinct over 60 million years ago. MLA Jordan Sturdy recently made a statement in the House about the importance of this discovery in Halkett Bay near Gambier Island, and to support the proposal to expand the Provincial Park Protected Area to ensure these reefs are protected. Sources: http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/	Glass Sponge Reefs	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 45.	

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1646(i)	March 23, 2015	John Harvey - Garibaldi Highlands, British Columbia	Tanker traffic in Howe Sound changes the ecosystem. Engine noise of tanker and tug boats will harm marine life.	Effect of Noise on Marine Life	Thank you for your comments. Woodfibre LNG is committed to building a project that is right for Squamish and right for BC – and this includes protecting the waters of Howe Sound. An assessment of the potential effects of the Project on marine mammals is included in Section 5.19 Marine Mammals, and includes an assessment of the effects of noise. The assessment indicated that vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the project area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time.	
1646(ii)	March 23, 2015	John Harvey - Garibaldi Highlands, British Columbia	Traffic impacts with BC Ferries and pleasure craft pose issues.	Marine Transport	According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight.	

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					The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. The assessment of marine transport (e.g. Project-related vessel interactions with BC Ferries) and marine recreational boating activities is included in Section 7.3 Marine Transport of the Application. The Application concluded that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Following detailed discussions with BC Ferries, Pacific Pilotage Authority and BC Coast Pilots, it has been determined that there will be no serious effect to BC Ferries when sharing the waterway near Horseshoe Bay with LNG carriers. Coordination with these vessels will follow normal communication protocols under the Marine Communication and Traffic Services (MCTS).Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1646(iii)	March 23, 2015	John Harvey - Garibaldi Highlands, British Columbia	Glass Sponge Reefs will be damaged if any tanker goes off course due to course changes due to other marine traffic.	Glass Sponge Reefs	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the glass sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. The glass sponge reefs are located at depths ranging between 20 m and 40 m at these locations. Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1646(iv)	March 23, 2015	John Harvey - Garibaldi Highlands, British Columbia	It also hurts the potential of further growth in Tourism Industry.	Tourism	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1647	March 23, 2015	Takaya Kerschbaumer - Squamish, British Columbia	ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable.	Seawater Cooling System	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 12.	
1648	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	I am absolutley against the proposed Woodfibre LNG project. It is time to recognize the value of the natural beauty of our environment and to build on this commodity as a natural resource we can trade on.	Value of Howe Sound	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1649	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I am concerned that the Woodfibre LNG project is in fact not in the socio-economic interests of residents of the Sea to Sky and broader BC coastal regions. Having examined the projected jobs and reports on other potential economic benefits in the application I understand that most jobs contracts and engineering work would not go to Sea to Sky residents and businesses. Due to the highly specified nature of this project that is quite understandable; however, it is because of the nature of this project that it does not benefit residents enough to warrant the environmental risks associated with a project of this kind (with the understanding that regardless of any and all safety measures, there are inherent risks and impacts without any accidents).	Employment	Thank you for your comments. From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/)	

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1650	March 23, 2015	Nadege Luquet - Canmore, British Columbia	I am opposed to the WLNG Project. I have yet to be demonstrated the benefit to anything or anyone. Here are my concerns: 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable.	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided			

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			During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else.			

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			9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly			

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			in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.			
1651(i)	March 23, 2015	Lyn van Lidth de Jeude - Bowen Island, British Columbia	The Salish Sea is a relatively small inlet which is heavily populated. When I moved here in 1978 Howe Sound was teaming with Herring, and Cod, Orca could be seen from time to time and Dolphin were a common sight. Human interference took that sea life nearly to extinction. Through thoughtful changes in practice the fish are just beginning to return. A project the size of the proposed Woodfiber LNG plant has NO place in this fragile inviornment. The tankers are too big, the risk of injury and death to humans as well as ocean life is a certainty.	Effect of the Project on Marine Life	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1651(ii)	March 23, 2015	Lyn van Lidth de Jeude - Bowen Island, British Columbia	I know my words are meaningless to you, but this is my home. How can an old woman in a kayak survive when faced with a super tanker?	Transport	Thank you for the comment. Squamish is Canada's outdoor recreation capital and Woodfibre LNG intends to help keep it that way. The assessment of marine transport (e.g. Project-related vessel interactions with BC Ferries) and marine recreational boating activities is included in Section 7.3 Marine Transport of the Application. The Application concluded that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Subject to the recommendations of TERMPOL Woodfibre LNG would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 m in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1652	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	My family works in the natural gas sector and live in the lower mainland. I do not see a problem with this project and would like to see it go ahead. I am worried the government has not properly put together a plan to ensure as much local jobs and training are available in the whole LNG sector	Employment	Thank you, your comment is noted. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/)	
1653	March 23, 2015	Terry Cowan - Sedona AZ, USA	As a visitor to Howe Sound spending my recreation dollars for years, I will hesitate to return to a place threatened by an LNG terminal. I side with concerned Howe Sounds locals when I say this is not the place. Preserve Howe Sound. Thank you Canada for the chance to comment and also for the great hospitality when I visit your beautiful Country.	LNG Project	Thank you for the comment. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1654	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	Please replace the comment form I just sent with this one. Thank you. I am strongly opposed to the LNG Woodfibre Project for the following reasons: 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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1655	March 23, 2015	Personal Information Withheld - Aquamish, British Columbia	No LNG for Squamish. There is no price on our environment. I will vote green until something changes this is a very bad idea	LNG Project	Thank you for the comment.	
1656	March 23, 2015	Dee Anderson - Bowen Island, British Columbia	I am strongly apposed to the building of the Woodfibre LNG Project for the following reasons: ENVIRONMENT: Missing and inadequate baseline studies on impact of site on fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues ENVIRONMENT: 9000 year old glass sponge reefs endangered by tanker traffic Anticipated smog and smell from site VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest necessary for project is unacceptable	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 16, 19, 20, 21 and 45.	

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1657	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	I believe that this project is truly in the best interests of our community based upon the environmental, economic, social, heritage and health benefits the project will offer. Environmental This project has already had a positive impact on the local environment with the environmental remediation from past industrial activates as stipulated in the proponent's purchase agreement with Western Forest Products. The proponent will also use substantially less of the site than what was passed used. This will allow the environment to benefit by returning parts of the site to nature. Many other parts of the world will also greatly benefit from access to this significantly cleaner energy alternative. While this project alone will not be able to eradicate coal usage in China, it is certainly part of the solution. This project also has the ability to reduce emissions from residents who commute. This project will inevitably be able to reduce trips to by those who commute to Vancouver by car or those who board a plane to work in remote camp settings like Fort McMurray. Project Opponents are quick to point out that this project may lead to and increase in hydraulic fracturing, but this is an unrelated issue, as the proponent has no upstream operations. I am frankly appalled by the hypocrisy of many opponents considering that this project will use the same sources of natural gas that they use in their own homes. This project will result in very modest emissions, equating to less than 9,000 car trips from Vancouver to Squamish each day (according to project opponents). I feel that these emissions are minimal and will have little to no impact on air quality. I am basing my opinion on the fact that, according to the Ministry of Transportation, there are over 13,000 daily average trips made on the Sea to Sky highway. These trips result in more emissions than Woodfibre LNG ever would and have yet to yield any air quality issues. The environmental issues of this project are negligible and are greatly outweighed by the benefits. I feel this is resulting from the efforts the proponents to listen to the community (e.g. choosing electric drive and placing the plant on land). Economic The economical benefits from this project run deep in the community, from construction to operation. Some local businesses, such as water taxi operators, have already benefited. In a community the size of Squamish, 100 family-supporting jobs are indeed significant. The generous tax proposal from the proponent will	LNG Project	Thank you, your comment is noted.	

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			positively impact all those in the community by offsetting the need to increase residential property tax rates. This will have the largest impact on the low-income members of the community, as they are most affected by increasing property taxes and stand to benefit most from increased community amenities. In contrast to the views of many opponents, I believe that this project will have little or no impact on tourism. From a visual impact perspective, the plant will be an improvement on the current site, which currently resembles a vacant parking lot. The minimal ship traffic will likely have no impact on recreational users. The City and District of North Vancouver are excellent examples of industrial and tourism related business thriving together. This project will create a more balanced local economy, and help to insulate from the cyclical nature of the tourism industry. Social The proponent has already proven to be a good member of the community. The company has listened to the concerns of many and made decisions with the community in mind. The company has gone out of their way to inform and seek meaningful consultation of the community. Woodfibre LNG has already sponsored several community organizations, notably several youth sporting events. By choosing to invest in the community early on, Woodfibre LNG has already demonstrated that they are committed to the betterment of society. The proposed project will also provide stable employment for many in our community. These well paying, family supporting industrial jobs is the kind of jobs that anchor families to communities, building strong healthy communities. The project will provide a sense of purpose for our community—many generations will be proud to help create a better world by providing a cleaner energy alternative. Heritage As a community that has deep routes to industry, this project will connect the community with it's proud past of producing sustainable products for export around the world by continuing to do so. The proponents have honored the past of Woodfibre by adopting the name as their own. Woodfibre LNG has shown a great commitment to working with the historical society to preserve the history of the site and the memories of the community. The proponent has also indicated openness to allowing recreational users the opportunity to access the surrounding backcountry through their site. Health			

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			operating a large semi remote facility, the proponents will need to have their own rescue capabilities. These capabilities will provide northern Howe Sound and surrounding area with increased emergency services. This will benefit the community by helping the preserve the scarce emergency resources the community has as its disposal. The community also benefits greatly from the health impacts of a cleaner global environment resulting from a decrease in coal usage.			
1658	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-13, and 46.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
			increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change			

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1659	March 23, 2015	Edi DePencier - Surrey, British Columbia	List of key concerns with Woodfibre LNG's application We have compiled a list of our key concerns with Woodfibre LNG's application below. Please feel free to cut and paste as many of these as you'd like to include. You can submit comments as many times as you like. 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, and 46.	

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			recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been			

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			released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in			

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			Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels.Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing).			

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			Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.			

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1660	March 23, 2015	Todd Griffiths - Squamish, British Columbia	With the fragile state of ecological regeneration in Howe Sound I do not feel that Woodfibre LNG should be developed. More tankers and environmental risks are not what it needs.	Recovery of Howe Sound	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1661	March 23, 2015	Personal Information Withheld - Corey, British Columbia	1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21.	

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			(SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's			

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			environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6.CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not			

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			conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise?			

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1662(i)	March 23, 2015	Steve March - Gibsons, British Columbia	At the Gambier Island meeting the Woodfiber people talked about a "Flaring" that would take place in the event of an emergency shut down. This would require a large burn off of gas and and introduce a public safety concern should the facility have trouble containing the emergency. How will the surrounding residence be notified of this emergency in the event that an evacuation be required?	Emergency Response	Thank you for your comments. Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met. The Project will also require a Facility Permit, Leave to Commence Construction and Leave to Operate from the Oil and Gas Commission (OGC), as well as numerous other environmental permits. As part of the Facility Permit application, Woodfibre LNG Limited must submit a summary of their flaring, venting and relief system design basis to the OGC for approval. The summary will include the following information; • The best practices, standards and guidelines for flaring and venting the proponent will apply to the design of the project • The alternatives considered to minimise flaring and venting with particular emphasis on normal operations, planned shutdowns, maintenance and start-ups • The design elements relating to measurement and reporting The OGC also refers proponents to their Flaring and Venting Reduction Guideline[20] as well as the Canadian Association of Petroleum Producers' "Best Management Practices for Facility Flare Reduction" (CAPP 2006). During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. In order to prevent accidents and malfunctions from happening, prior to operation of the Project, the Liquefied Natural Gas Facility Regulation requires that Woodfibre LNG Limited prepare a Safety Loss and Management Program that complies with CSA Z276. This program includes a detailed Emergency Response Plan that includes documented emergency response plans, required equipment, training requirements, identification of trained personnel and plans for emergency drills and exercises. It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an	

[20] BC Oil & Gas Commission. 2015. Flaring and Venting Reduction Guideline Version 4.4. Available online at http://www.bcogc.ca/node/5916/download

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					emergency related to the Woodfibre LNG Project. Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1662(ii)	March 23, 2015	Steve March - Gibsons, British Columbia	Gibsons and the Sunshine coast is not only part of Howe Sound but will be directly affected by Tanker traffic due to the alternate rout which would be used traveling down between Bowen Island and Keats Island. Will the Woodfiber LNG Proponent come to Gibsons to allow us and the Sunshine Coast learn about what the Proponent is planning to implement?	Public Consultation	Woodfibre LNG Limited evaluated two options when considering the route from the entrance to Howe Sound to the Project site as described in the Alternative Means of Undertaking the Project section of the Application (Section 2.4). Both routes are technically and economically feasible and follow the same shipping route from the Woodfibre site to the north of Bowen Island where the routes diverge. Because all other factors (e.g., safety, environment) are considered equal, the east route (Route A) was selected as it is more direct. The route along the west side of Bowen Island is no longer under consideration.	
1662(iii)	March 23, 2015	Steve March - Gibsons, British Columbia	Will the heat generated by this LNG facility (both in the air and the water), introduce enough climate change in the area to affect local bird and fish migration?	Heat Bubble	The Project will not affect local meteorological patterns. Overall, it is anticipated that flaring will occur less than 3% of the time. The flaring system will allow for the safe disposal of waste gases when vented or burned during maintenance and emergency situations without exceeding permissible exposure limits for heat radiation and substances hazardous to health. In British Columbia, the height and location of the flare stack must be designed to meet OGC and Canadian Standards Association (CSA) standards for LNG projects, including safety and heat dispersion. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1663(i)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I'm against LNG. I'm certain it will cause more damage to this region than it will bring benefits. Who will want to come and start a life here when we have a big industry possibly polluting water and air.	LNG Industry	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1663(ii)	March 23, 2015	Personal Information Withheld - Squamish,	I'm concerned about the noise that it will generate.	Noise	The potential Project-related effects on sound were assessed in Section 5.4 of the Application. The assessment used a predictive sound model, and included construction and operation sounds,	

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		British Columbia			including sound from the LNG carriers. The sound assessment concluded that sound from the Project met Oil and Gas Commission guidance as well as Health Canada guidance for sound levels. In addition, two of the factors that Woodfibre LNG Limited took into consideration when assessing alternatives and choosing a seawater cooling system over an air cooling system was public concern about noise and visual effects from using air cooling.	
1663(iii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Will there be any smoke/smell produced?	Air Quality	There is no odour associated with LNG facilities. The odour associated with natural gas is an additive called mercaptan, which is a safety feature to warn of potential leaks in homes and businesses. The additive is removed from the natural gas before it is liquefied, and does not produce odours at LNG facilities. Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects. Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. Please also refer to the Air Quality Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1663(iv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I'm also profoundly against an industry that is not sustainable. Why wasting our time, money, our environment, possible our health on extracting natural gas that is limited in supply. Why hurting/damaging everything around for something that will run out. Let's focus our time, money and energy on sustainable methods of producing energy. How cool would it be if Squamish was leading the way in Canada on this. Let's protect our beautiful Howe Sound and everything that lives in it.	LNG Industry	Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[21].	

[21] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1664	March 23, 2015	Carol a Roberts - Squamish, British Columbia	Howe Sound should be cherished and become a First class Marine Park for all the world to enjoy. It should become the Baniff and Jasper of the West Coast.. Have you seen the teal color of the water where the Squamish River runs into the sea. It is Glacial silt, the same as Emerald Lake and Lake Louise and who developed and saved this land for tourism and the Natural beauty. Howe Sound offers everything except the funding and protection of the Federal and Provincial governments. Tankers do not belong there. Once there,we cannot get rid of them and it would be a terrible mistake to loose Howe Sound as a Park. There is a Marine Park at Whyte Cliff Park in West Vancouver, at the mouth of Howe Sound, this tells us how All of the Sound could be. Swells Marina has for some years taken tourists into the Sound .They also should be a source of valuable information regarding the Nature of Howe Sound, We must go forward with care for Canadians of All ages. Take guardianship of our Natural resources . Make good long term decisions.	Value of Howe Sound	Thank you for the comment. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1665(i)	March 23, 2015	John Dudley - Lions Bay, British Columbia	"Fiddling while Rome burns" is a phrase most people are familiar with and it appears that our Federal and Provincial leaders are following in Nero's footsteps. Evidence of how fast Rome is burning is all around us and yet our leaders seem oblivious. This winter our local mountains have received the lowest snowfall on record, temperatures in the North Pacific have risen rapidly and in the East they have experienced the lowest temperatures and greatest snow falls since records began. Our scientists have been muzzled and the misinformation abut the benefits of LNG from our leaders is tragic.	Climate Change	Thank you for your comments. Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[22]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

[22] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1665(ii)	March 23, 2015	John Dudley - Lions Bay, British Columbia	With plunging oil prices and our plunging dollar we are being given the greatest opportunity ever to show off one of our greatest natural resource, which is this staggeringly beautiful Sound and the mountains that surround it. At the 2010 Olympics we were on display to the world and from the subsequent rise in tourism it is obvious that the world was watching. No major city in the world has such an incredible natural resource on it's doorstep, yet our leaders want to re-industrialize it. They should be concentrating on turning Howe Sound into a World Heritage site and setting an example in environmental awareness. We were once a nation that prided ourselves for being known as peace keepers and protectors of the environment. This image has been severely tarnished and many of us are ashamed of what we are becoming. I implore our leaders to stop fiddling and save Howe Sound before it is too late.	Tourism Value of Howe Sound	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.	
1666	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I oppose the Woodfiber LNG Project for the following reasons... 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21.	

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			outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt			

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			throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Source: B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint.			

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			Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else. 9. ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise?			

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1667	March 23, 2015	Personal Information Withheld - Gibsons, British Columbia	Environment... This project threatens the recovery the Howe sound is experiencing after the damage caused by Woodfibre as a pulp and paper mill. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk.	Safety	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1668	March 23, 2015	Personal Information Withheld - Surrey, British Columbia	I absolutely am opposed to any Fracking in BC. Please do not allow this latest venture near Squamish Bc to go ahead. Thank you	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1669	March 23, 2015	Drew Rouse - Whistler, British Columbia	No dirty LNG in our corridor. We don't want to take on some corporations environmental risks. Our corridor is famous the World over for its natural beauty and wild landscapes, just one accident and that is gone forever. So keep these dirty oil and gas corporations out of our backyard. We will fight this to the end. No LNG or any other dirty oil and gas infrastructure in the Sea to Sky corridor, ever! ~Drew Rouse	LNG Project Safety	Thank you for the comment. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from	

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					these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1670(i)	March 23, 2015	Personal Information Withheld - Squamish B.C., British Columbia	I was born and raised here in squamish and i have seen this town change so much we have finally gained back are wildlife after so long. we finally have killer whales and dolfins comeing up are coast and putting in the pipe line would destroy all that. The sound polution in the water alone would detur them from comeing back.	Effect of Noise on Marine Mammals	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. An assessment of the potential effects of the Project on marine mammals is included in the Application (Section 5.19. The assessment indicated that noise from pile driving (during construction) and vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the Project area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time. Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1670(ii)	March 23, 2015	Personal Information Withheld - Squamish B.C., British Columbia	They say they will hire lots of squamish residents... but lets be real, to run a plant like that it would take lots of highly trained people whom im sure dont live in squamish. Recintly I heard an ad about LNG and they were proudly saying that they have already hired 6 local people. like wow 6 whole people when im sure they have lists of people that are ready to come here and run this place, and saying its going to be one of the safest plants out there cant be true everything breaks down we are people eventually we all make mistakes and are whole area would be ruined. They want to put it in as fast as they can and thats how corners are cut to save costs and time they are not thinking of the final outcome just the quick money to be made and thats all they care about. Not this town just the money	Employment Safety	From the very start, Woodfibre LNG Limited has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and	

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					in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1670(iii)	March 23, 2015	Personal Information Withheld - Squamish B.C., British Columbia	all the people that reside here love this town. if any of you remember when woodfire was here you will agree that that it sucked when the wind blew into town it would stink a loud plant there isent what this town needs we dont need a pipe line going down our coast threatning the whole enviornment at just one major mistake its not worth it.	Air Quality Noise Pipeline	There is no odour associated with LNG facilities. The odour associated with natural gas is an additive called mercaptan, which is a safety feature to warn of potential leaks in homes and businesses. The additive is removed from the natural gas before it is liquefied, and does not produce odours at LNG facilities. Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects. Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. The potential Project-related effects on sound were assessed in Section 5.4 Atmospheric sound of the Application. The assessment used a predictive sound model, and included construction and operation sounds, including sound from the LNG carriers. The sound assessment concluded that sound from the Project met OGC guidance as well as Health Canada guidance for sound levels. In addition, two of the factors that Woodfibre LNG Limited took into consideration when assessing alternatives and choosing a seawater cooling system over an air cooling system was public concern about noise and visual effects from using air cooling. Woodfibre LNG notes that a portion of the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Please also refer to the Air Quality Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1671(i)	March 23, 2015	Lee Turnbull - Granthams Landing, British Columbia	LNG Tankers in Howe Sound? The proposal to load LNG at Woodfibre and bring it down Howe Sound for export presents entirely unacceptable risks: danger to the population harm to irreplaceable rare glass sponge reef interfering with recreation and ferry traffic--loss of economic and tourism opportunities Rare glass sponge reefs	Recreation / Marine Transport	Thank you for your comment. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Following detailed discussions with BC Ferries, Pacific Pilotage Authority and BC Coast Pilots, it has been determined that there will be no serious effect to BC Ferries when sharing the waterway near Horseshoe Bay with LNG carriers. Coordination with these vessels will follow normal communication protocols under the Marine Communication and Traffic Services (MCTS).Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. The minimum water depth along the shipping route is 60 metres, and	

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					the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	
1671(iii)	March 23, 2015	Lee Turnbull - Granthams Landing, British Columbia	Archaic cooling system which proposes a 1.5 meter pipe sucking up cool water from the Sound, chlorinating it 17,000 gallons? per hour, and then putting heated water back into the Sound.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21^{o}C or 10^{o}C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10^{o}C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1^{o}C above ambient is 125 m^{3} (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time. Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L. The effects of the Project on marine water quality is assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1672	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	As you can see by the links below, ancient Glass Sponge Reefs have been discovered in Howe Sound. The tankers passing through Howe Sound will not have enough clearance to pass over the 9,000 year old reef if they happen to go off course. Mr. Sturdy has even gone as far as speaking to this in Ottawa. http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/	Glass Sponge Reefs	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 45.	
1673	March 23, 2015	Personal Information Withheld - The Netherlands, British Columbia	142 thousand tonnes of greenhouse gas emissions is unacceptable Social costs and health impacts of air pollution The once-through seawater cooling system proposed by Woodfibre LNG is outdated	GHG Emissions Effects of the Project on Health Seawater Cooling System	Thank you for your comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 12, 13 and 16.	
1674	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	Hello, I am opposed to the Woodfibre LNG Project due to the impact on the environment resulting from regular operations, and the risks of an accident or earthquake damage. I have lived in Vancouver all my life and regularly take the ferries out of Horseshoe Bay and cruise and race on sailboats, and kayak in Howe Sound.	Effect of the Project on Environment Safety Seismic Hazard	Thank you for your comments. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline	

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					network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1675(i)	March 23, 2015	Margaret Giuliani - Vancouver, British Columbia	I am Thoroughly against LNG and Fracking in BC. But this being placed in Howe Sound is insult upon injury. I would like to see an independent study that has no funding or Scientists that have worked for the Oil industry. I have lived in this area all my life and have a science back ground and have watch it degenerate through the years. It has cleaned up some but now we have so many people in the lower mainland and that also causing land, water and air quality problems! To add to it is crazy and to bring Fracked gas (which is unbelievably damaging to our water!!!! land and air!!!!!) is just insanity!	Hydraulic Fracturing LNG Project	Thank you for your comments. Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1675(ii)	March 23, 2015	Margaret Giuliani - Vancouver, British Columbia	This does not bring enough jobs to the regions and only makes the fossil fuel industry rich at the expense of our quality of life and future generations quality of life. The jobs and diversity that new renewable energy investment would bring to our economy... hugely out ways what the fossil fuel industry gives on all levels including the ones they don't measure in there reports that are more important than anything... global warment and most important preserving our environment for future generations can enjoy an environmentally intact world that brings them quality of life... the air water and land that gives us life!!!	Employment Local Economy Climate Change	An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services. Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[23]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

[23] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1676(i)	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	I oppose the Woodfibre LNG project because of the safety and environmental concerns.	Safety Effect of the Project on the Environment	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[24]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

[24] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1676(ii)	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	Woodfibre LNG is proposing a damaging cooling method to help cool the LNG facility. This method has been banned in California and several other places because it is very damaging to critical marine life.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[25]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System Information Sheet that has been prepared as part of the Woodfibre LNG Limited Response to Public Comments.	

[25] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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1677(i)	March 23, 2015	Patricia French - Garibaldi Highlands, British Columbia	Please allow us to continue our efforts to facilitate the recovery of Howe Sound. This is a precious place and deeply loved by the community that dwells here. We want to protect this beautiful environment rather than endanger any further the fragile habitat which remains. This is our duty to our children and the generations to come. This is our home and we want to preserve it. Huge sea-going vessels navigating this sound on a frequent basis accompanied by other watercraft present risks that we must contemplate! Commercial traffic in the Sound will not improve the quality of life in the District of Squamish. It is already perfect the way it exists today. With constant care and ecological awareness we can protect our home and our way of life for years to come.	Recovery of Howe Sound	Thank you for your comments. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1677(ii)	March 23, 2015	Patricia French - Garibaldi Highlands, British Columbia	Let us have respect for these awesome surroundings and the flora and fauna found here- glass sponge, salmon, and gray whales for example.	Effect of Project on Marine Life	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on marine water quality is included in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. An assessment of the potential effects of the Project on marine mammals is included in Section 5.19 Marine Mammals. The Application concluded that there is the potential to marine mammals to experience short-term behavioural disturbances from construction activity (pile driving) and vessel traffic. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the Project area and in the vicinity of the Project site to monitor potential changes of marine mammals over time. Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1677(iii)	March 23, 2015	Patricia French - Garibaldi Highlands, British Columbia	Stop the LNG project before some horrific disaster occurs and destroys Howe Sound forever!	Safety	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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<tr><th>Comment #</th><th>Date Received</th><th>Author</th><th>Comment</th><th>Issue / Theme</th><th>Proponent's Response</th><th>EAO's Response</th></tr>
<tr><td>1678(i)</td><td>March 23, 2015</td><td>Personal Information Withheld - Squamish, British Columbia</td><td>The proposed wood fibre LNG plant should never happen here. My concerns are many and varied but I will name a few main ones here. Firstly, I am very concerned about the effects this could have on the air and water quality in Howe sound. The release of nitrogen oxides and sulphur dioxides into the environment are surely detrimental to air quality.</td><td>Air Quality</td><td>Thank you for your comments.
The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.
The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.
Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:
<table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table>As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.
Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the Environmental Management Act.
At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.
Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</td><td></td></tr>
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1678(ii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The use of seawater for cooling in the plant and subsequently discharging huge amounts of heated and chlorinated water back into the sound is unacceptable.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21^{o}C or 10^{o}C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10^{o}C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1^{o}C above ambient is 125 m^{3} (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time. Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1678(iii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Howe Sound has made a comeback in recent years in terms of recovering from past industrial activities and an lng export facility will have very damaging effects on the plankton, herring, salmon and many other species.	Recovery of Howe Sound	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1678(iv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I also have concerns with the transport of an extremely dangerous material in a narrow fjord. An accident may be unlikely but should there be one, it would be disastrous the the area. There exists the concern of gas pipeline fires or explosions as well.	Safety Pipeline	LNG shipping is absolutely safe. In fact, LNG has been shipped for more than 50 years around the world without one incident of loss of containment. It's also important to know that Howe Sound has been an established shipping route for more than a century, and that it is well suited for the movement of LNG. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Siting of the Woodfibre LNG facility complies in every way with SIGTTO guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. *Narrow channel/waterway* TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel. SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m. *LNG Carriers & Howe Sound Shipping Channel / Route* • An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs. • Howe Sound at its narrowest along the shipping route is 1440 metres, or4725 feet. • The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet, and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. *Additional Information* Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This	

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					dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG notes that the comment about the pipeline directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1678(v)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	What about the possibility of damage to these pipelines due to earthquakes?	Seismic Hazard	Woodfibre LNG notes that the comment about the pipeline directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.htmlWoodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.	

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1678(vi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Another key reason to oppose this project is the fact that it supports the very environmentally damaging process of hydraulic fracturing. This process uses massive amounts of water, injects "unknown" chemicals into the ground, causes earthquakes, and leaves aquifers toxic and unusable.	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1678(vii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	LNG is very costly, both financially and environmentally, to cool and transport; as much if not more than bitumen or coal. LNG is best burned closest to it's source and not exported over great distances. NO to LNG in Squamish!	Sustainable Economy	The price and quantity of natural gas available to local markets is outside the scope of this Assessment. These factors are tied to markets. Woodfibre LNG notes however, that National Energy Board considered evidence pertaining to these matters in making its decision to issue an Export License in respect of the Project and determined that "the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends for discovery of gas in Canada". (NEB License GL 304)	
1679	March 23, 2015	Brahm Olszynko - Vancouver, British Columbia	We must be leaders towards sustainable resources. This is unsustainable. Rethink your strategy for Canada's future.	Sustainable Economy	Thank you for the comment. Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[26]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[27]. China's energy demand increases by 5% annually[28]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[29].	

26 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
27 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
28 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
29 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1680	March 23, 2015	Laurie Parkinson - Bower Island, British Columbia	Will the plant be built with equipment for chlorination? What material will be used to reduce residual chlorine before discharge and references re its effect on marine life. What monitoring will be done to discover the effect of chlorine on fish – health of sensitive gill tissue (mucus production), change of habitat – fish avoidance? Larvae, juvenile, and adult fish can be impinged (stuck to screens) which may kill them from physical abrasion or suffocation. Larvae are most susceptible as don't swim fast. Juvenile herring more susceptible to impingement than salmon, but 30-50% of salmon less than 2 ft long were dead 3-18 hours after impingement. Larvae, juvenile, and adult fish can be impinged (stuck to screens) which may kill them from physical abrasion or suffocation. Larvae are most susceptible as don't swim fast. Juvenile herring more susceptible to impingement than salmon, but 30-50% of salmon less than 2 ft long were dead 3-18 hours after impingement. Entrained larvae will be killed.	Seawater Cooling System	Thank you for your questions. Section 2.2.6.2.10 of the Application describes the proposed production and dosing of sodium hypochlorite as part of the Project's seawater cooling system. Before being discharged back into Howe Sound, the seawater will pass through a de-aeration tank. This tank is designed to encourage mixing of seawater and the air, which removes chlorine from the water. A de-chlorination agent will be added to the seawater, if it is needed, to reduce the chlorine concentration to meet water quality guidelines. The residual levels of chlorine at the discharge ports are very low, 0.02mg/L – below a level considered lethal to marine life. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The intake used for the seawater cooling system will be designed to meet DFO BMPs for approach velocity and screen size, as outlined in *Guidelines for Minimizing Entrainment and Impingement of Aquatic Organisms at Marine Intakes in British Columbia*. The intake will be: • located at a depth of more than 25 metres, which is below the depth where marine organisms are found in the greatest numbers. • located approximately 2 metres above the seafloor, above sediment and bottom-dwelling organisms. • covered by a coarse screen, which will stop larger marine life such as adult fish and seals from entering the pipe. Seawater will enter the intake at a velocity of 0.1 metres per second, which is less than the swim speed of adult fish. Additional information on the seawater cooling system intake and discharge, including monitoring of impacts to water quality and forage fish, was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammals, information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1681	March 23, 2015	Megan Cesarone - Squamish, British Columbia	What about the trees? Yes, the trees. Does no one care about the trees anymore? Is the world going to end up like The Lorax? That's not just a children's story you know, that IS how the world will end up if we continue to let companies like LNG run it. They use words like environment and sustainability but they don't even know what those words mean anymore. They only use those words to make us think they care. They don't care about us or about the Earth, they only care about money and themselves. Most people coming to Squamish these days come to enjoy the trees, the ocean and the mountains our beautiful lands have to offer. Our community will find a way to truely be sustainable and more environmentally friendly without LNG in place. My name is Megan Cesarone and I live in my van, by choice, not because I think it's 'cool' but to lead a simpler life, to consume and waste less and to promote others to do the same. I am the one picking up LNG's empty beer cans from the side of the road, I am the one turning their lights out when I leave the washroom, and I am the one who will save the trees from them any little way I can. So I say NO to LNG Woodfibre and can only hope with all my heart that you will too.	LNG Project	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1682	March 23, 2015	Personal Information Withheld - Vancouver, British Columbia	SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.	Safety	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11.	

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1683(i)	March 23, 2015	scott stachoski - Squamish B.C., British Columbia	I was born in Squamish 34 years ago. Seen the industry booming to non existant. Also what I don't miss is the pollution from woodfibre. Since industry has left and the efforts to revitalize howe sound, herring runs, the estuary, nexen beach and britania mine has been huge. Years of man hours and millions of dollars all for what... for some big bussiness foreigners to bully its way into our lives, home and future generations home to throw all that work away. Squamish and the sea to sky opposes this project and they can take it to their front door.	Industrial Legacy	Thank you for your comments. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1683(ii)	March 23, 2015	scott stachoski - Squamish B.C., British Columbia	From what I have researched LNG is failing everywhere else in the world. Renewables have come so far in technology and costs. European countries have proven this. Why invest in old agingttechnology when better tech is here and growing.	LNG Industry	As LNG Projects involve significant capital investment which is recovered over a long period of time, final investment decisions (FIDs) on LNG projects are not made lightly, nor are they based on the price of oil or gas on any given day, or even a given year. Rather, FIDs are made based on long-term forecasts and take into account numerous factors, many of which are specific to the project or the proponent(s). Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[30]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[31]. China's energy demand increases by 5% annually[32]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[33].	

30 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
31 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
32 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
33 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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1683(iii)	March 23, 2015	scott stachoski - Squamish B.C., British Columbia	Think of the future. Bc holds a vast amount of freshwater sources and many countries have very little and the use of fracking for lng is disgusting..poisoning our water sources for short term income for billionaires that don't live here. This alone is disasterous death sentence...how long can this possibly go on before someones like ahh we screwed up. Sorry. Then my kids and others suffer from the consequences who never got to speak their mind and our government failed to protect them. Its a backwards way .. not moving forward .. old world thinking.. stupid idea and our government should be ashamed of themselves and our children have the right to be protected because they are what is precious in this world and money does not matter in what we are losing in exchange.	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1684(i)	March 23, 2015	Christina Laursen - Furry Creek, British Columbia	QI I grew up on the Howe Sound. Moved to Lions Bay at the age of 12. My father owned Lions Bay Marina and we ran the water taxi's around the Sound for the summer resident's on the local islands. This was 1963. At that time on any given day one could witness pods of whales frolicking in the waters, schools of Dolphins chasing the water ski boats and water taxi's, it was surrealism at it's best. Every year a huge Salmon Derby was sponsored in the Sound with 100's of participants. It was a 3 day event.....we were up all night with the fisherman preparing for the big event. Over the year's with the continual pollution of these magnificent water's all this slowly disappeared and died. Eventually the whales and dolphins were gone and the water's became so polluted that people were advised not to eat the fish from the Sound. After major cleanup and closing down Woodfiber the sealift has once again returned to the Sound. It is only in recent year's that we see pods of whales, school's of Dolphins frolicking again in these water's. It is safe to fish again for the varieties of salmon and cod that have now returned to our water's.	Effect of the Project on Marine Life Industrial Legacy	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1684(ii)	March 23, 2015	Christina Laursen - Furry Creek, British Columbia	Are we seriously going to risk all this yet again, for the LNG plant that in the end will only employ a small handful of people, will not increase the tax base and will have huge tanker's running up and down these pristine water's. Fortis say's it will not effect the sea life. How can it not! The rumbling's of the freighter's alone will do major damage to our sea life.	Economic Justification of the Project Effects of Vessel Noise on Marine Life	Woodfibre LNG notes that the comment about Fortis BC is in reference to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Woodfibre LNG Limited will pay a variety of taxes, including income tax, LNG tax, and municipal property tax. Property taxes are paid on the assessed value of the facility and are independent of profit. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead. The Application includes information on the economic benefits of the Woodfibre LNG Project, should it go ahead. • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information see Section 2.6 Project Benefits of the Application. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential effects of the Project on marine mammals and forage fish is included in the Application (Section 5.18 and 5.19), and includes an assessment of the effects of noise. The assessment indicated that noise from pile driving (during construction) and vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs. Woodfibre LNG Limited will retain a contractor to perform underwater acoustic monitoring for pre, during and post Project construction. The underwater monitoring will collect underwater sound levels and marine mammal presence (e.g., of those species present, their frequency and seasonality). This will contribute further to baseline information for both underwater sound levels and mammal presence in the project area and in the vicinity of the Project Site to monitor potential changes of marine mammals over time. All discharges to the marine environment will comply with applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality	

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					Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. Section 5.10 Marine Water Quality assesses the potential Project-related effects to marine water quality. The Application concluded that, with mitigation measures, there are no Project-related adverse effects to marine water quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15) and Marine Benthic Habitat (Section 5.16). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1684(iii)	March 23, 2015	Christina Laursen - Furry Creek, British Columbia	Then there are. The spills to consider. Should there be a spill it would take year's again for the Howe Sound to become the pristine, clean water's that we and the sea life enjoy today.	Safety	Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. In the unlikely event there is a spill from an LNG carrier, LNG will never mix with water. Instead, it will quickly return to a gas state, and because methane is lighter than air, the gas will rise and dissipate into the air. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments	

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1684(iv)	March 23, 2015	Christina Laursen - Furry Creek, British Columbia	The Howe Sound, Squamish and Whistler are quickly becoming world renowned for outdoor recreation. How does one mix outdoor recreation and tourism with an LNG plant? It's like trying to mix oil and water! Say "NO" to LNG!	Tourism	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.	
1685(i)	March 23, 2015	Personal Information Withheld	The risk management undertaken to date from what I can see is not comprehensive and has gaps. primarily looks at risk to the vessel from a spill and gives the facts in terms of pool size, fire, vapouraisation. There has been no attempt to localize this information and put it into a local context. E.g, the distance across (width) of the Howe Sound and what this would mean re a spill near Nexen Beach or Horsehoe Bay for example as the widest and narrowest points. There is no risk assessment of potential mortality / morbidity for best and worse scanarios for the location of a spill or the Public Health Impact. Have they been consulted? What would be the consequences of a spill on fish / salmon etc following a spill and water freezing / burning and Nitrogen being held in colder deeper waters for longer periods? Where there are no consequences following investigation this should be stated. The Liquefied Natural Gas Safety Research Report to Congress May 2012 section VIII. LNG Spill Prevention and Risk Management had some important conclusions and recommendations that do not appear to have been concluded to provide assurance. E.g. 'As noted in both the 2004 and 2008 Sandia LNG reports, risk prevention and mitigation techniques can be important tools in reducing both the potential for a spill and the hazards from a spill, especially in locations where the potential impact on public safety and property can be high. However, what might be applicable for cost-effective risk reduction in one location might not be appropriate at another location. Therefore, coordination of risk prevention and management approaches with local and regional emergency response and public safety officials is important in providing a comprehensive, efficient, and cost-	Spill Prevention Risk Management	Thank you for your comments The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Particular attention is given to the assessment of effects associated with loss of LNG containment from carriers as well as the potential effects for each valued component (e.g. fish, public health).Siting of the Woodfibre LNG facility complies in every way with SIGTTO guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. *Narrow channel/waterway* TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel. SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m. *LNG Carriers & Howe Sound Shipping Channel / Route*	

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			effective approach to protect the public and property at a given LNG import or export location. From an LNG vessel damage viewpoint, the analyses conducted and presented in this report suggest that significant damage is likely to LNG vessels from medium and large breach events and spills. Therefore, a large breach and spill could have both short-term and long-term impacts on public safety, energy security and reliability, and harbor and waterway commerce at some sites. For this reason, significantly more attention and proactive measures should be considered for preventing the possibility of larger breach and spill events or for mitigating the cryogenic and fire impacts of larger spills on LNG vessels. Similarly the Technical findings summarized highlighted points for further review • No such thing as a 3 km exclusion zone. • Tethered means tug has a line on the ship for safety if loss of power • Characteristic of LNG spill is that it freezes and creates an ice layer in the area that it spills on. • On water it would create an ice layer that would isolate LNG from the water below. • Sandia confirmed there is a natural limit to vaporization fireball would be 4x the size of the fire diameter. This means that a 100 feet flame diameter would have a 400-foot fireball. So a 330m pool (as above) might have a fire less than this but what would be the size of the fireball? • International regulations do not cover local wildlife and acoustics local standards look at these issues and internationally they vary from country to country. What are ours? • Exclusion zones are in very narrow channels or harbors.Exclusion zones are nota huge area rest of the world usually 50 meters either side of the vessel and 500 meters in front. These need reviewing in my common sense mind depending on shore population and environment e.g. Ferries passing close by from Horseshoe Bay etc • Plans to conduct a Marine Aids Review in the Howe Sound Area should be reviewed based on: • Criteria other than reviews triggered by request for services or volume of traffic or size of vessel transiting the area changes.		• An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs. • Howe Sound at its narrowest along the shipping route is 1440 metres, or4725 feet. • The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet, and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. *Additional Information* Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Please refer to Section 5.19 Marine Mammals for a discussion on the regulations used to assess the potential effect of noise on marine mammals. For in-air noise, the National Marine Fisheries Service (NMFS) has adopted behavioural disturbance acoustic thresholds for both harbour seals (90 dB relative to 20 micro Pascals (µPa) at 1 metre (m) (re 20 µPa) (rms)) and other pinnipeds (100dB re 20 µPa (rms)). As there are no acoustic behavioural thresholds established under Canadian legislation for in-air noise, the NMFS thresholds have been applied for the present assessment. No acoustic thresholds presently exist under Canadian or US legislation (NMFS) for onset of auditory injury in pinnipeds with respect to in-air noise. Assessment of the potential effects of underwater anthropogenic noise on marine mammals requires acoustic thresholds against which received sound levels can be compared. The injury and disturbance sound threshold criteria currently applied to most underwater noise assessments in Canada and the US are based on the rms SPL metric as adapted for pulsive and non-pulsive sound sources. The injury threshold for cetaceans is 180 dB re 1 micro-Pascal (µPa) (rms), and 190 dB re 1µPa (rms) for pinnipeds for both pulsive and non-pulsive noise sources (NOAA 2014). Two types of auditory injury are considered in National Ocean and Air Administration's (NOAA) injury sound threshold criteria (NOAA 2014), referred to as temporary threshold shifts (TTS) and permanent threshold shifts (PTS). The term TTS refers to a relatively short-term reversible loss of hearing following noise exposure, often resulting from cellular fatigue and metabolic changes (Saunders et al. 1985, Yost 2000). The term PTS refers to an irreversible loss of hearing (permanent damage) following	

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					noise exposure that commonly results from inner ear hair cell loss or severe damage or other structural damage to auditory tissues (Saunders et al., 1985, Henderson et al. 2008). The behavioural threshold for all marine mammals is 160 dB re 1µPa (rms) for pulsive noise (e.g., impact pile driving) and 120 dB re 1 µPa (rms) non-pulsive noise (e.g., shipping) (NOAA 2014). Behavioural responses are not necessarily predictable from the sound-source level (loudness) and may vary depending on factors such as age and status of the animal, type of activity, and social context (McCauley et al. 2003). A review of the Aids to Navigation that may be required for the Project under the *Navigation Protection Act* will be conducted by Transport Canada at the permitting stage. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments	
1685(ii)	March 23, 2015	Personal Information Withheld	• This is a major project and should be subject to environmental reviews .	Environmental Assessment	The Project is subject to federal and provincial environmental assessment processes. Pursuant to the Memorandum of Understanding between the Canadian Environmental Assessment Agency and the EAO, the provincial review will satisfy all conditions outlined in the Substitution Decision document. Both levels of government will render decisions.	
1685(iii)	March 23, 2015	Personal Information Withheld	• TERMPOL looking at aspects other than the transfer of cargo, and how that can be done safely e.g Inc Public Health and Safety & impact on things such as marine life • I have not seen a local documented preparedness and response regime should an LNG spill occur for critique by the public. • The Canadian Code guard do not specific (except broad brush statements) what this means locally e.g. Best and worse scenarios in terms of response times – what actions could be taken – if they have sufficient human resources (no required for size of spill & actions to be taken etc) 15 trained people means nothing. • How does this effect and compare with the work historically undertaken as part of the Squamish Multi Hazard Risk Assessment Just a few points but out of time	TERMPOL Review Emergency Response	The assessment of Project-related effects to marine life and public health is undertaken in the Application (see Section 5.0 and Section 9.2). In order to prevent accidents and malfunctions from happening, prior to operation of the Project, the Liquefied Natural Gas Facility Regulation requires that Woodfibre LNG Limited prepare a Safety Loss and Management Program that complies with CSA Z276. This program includes a detailed Emergency Response Plan that includes documented emergency response plans, required equipment, training requirements, identification of trained personnel and plans for emergency drills and exercises. It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project.	
1686	March 23, 2015	Vel Anderson - Gibsons, British Columbia	The stability of the earth containment dykes under the design SSE (safe shutdown earthquake) loading needs to be addressed. has Has the stability of the earth containment dykes under the 10,000 year shaking equivalent to a peak ground acceleration of 0.63g been addressed? Has Woodfibre LNG produced a study/report on the risk of slip surface failure and/or development of significant cracking/deflections of the earth containment dykes should be investigated in order to ensure that the contents of the tank could be contained after a major seismic event following failure/rupture of the tank.	Seismic Hazard	Thank you for your question. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed for a one in 2,475 year earthquake. Earthquake design loadings will be in accordance with the National Building Code of Canada, the BC Building Code, and satisfy CSA standards for LNG plant design. Additional information on the seismic design criteria is provided in the Section 2 of the Woodfibre LNG Geotechnical Report by Knight Piésold Ltd., which is available on the EAO website.	
1687	March 23,	Bree Nabholz -	LNG is proposing an extraction and cooling	Seawater Cooling	Woodfibre LNG Limited acknowledges Aboriginal rights and their	

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	2015	Victoria, British Columbia	method that is recognized as being outdated and environmentally irresponsible. It will compromise the integrity of the environmental diversity, integrity and beauty of the Howe Sound. This will affect marine life including salmon, herring and phytoplankton as well as us, the people who rely on this resource . First nation councils, municiple governments and the people of BC have spoken out against this project due to serious safety risks and I urge our elected representatives to recognize this and reject this project. I am thoroughly opposed to this project.	System	importance in British Columbia and Canada, and has engaged with and continues to engage with Aboriginal groups concerning the Project in a respectful and meaningful way. Part C Aboriginal Groups Information Requirements of the Application includes information about consultation with potentially affected Aboriginal groups. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1688(i)	March 23, 2015	Personal Information Withheld	Michael Sheppard	Professional Responsibility	All work conducted on the Project is being done in accordance with the *Engineers and Geoscientists Act.*Woodfibre LNG Limited has	

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			Project Assessment Manager Environmental Assessment Office (EAO) PO Box 9420 Stn Prov Govt Victoria BC V8W 9V1 By email: Michael.Shepard@gov.bc.ca Re: Woodfibre LNG Project Please accept the following comments on the Woodfibre LNG Project. Although the public legitimately has many serious concerns regarding the many potentially adverse environmental, social and economic impacts of this project, the primary focus of my comments rotate to the integrity of the technical review and review process. Accordingly I request a response from the EAO for most of my comments. Woodfibre LNG Project - Review of Selected Issues. March 23, 2015 **1. Professional Responsibitity** Mast of the available project documents and some comments from reviewing agencies do not indicate the professional qualifications of those who take responsibility for the information in those documents. Review credibility is enhanced, for example, when professional registered biologists take formal responsibility for their conclusions on issues within their professional expertise. Similarly, the *Engineers and Geoscientists Act* of BC requires that only individuals licensed by the Association of Professional Engineers and Geoscientists of BC (APEGBC) are perntted by law to undertake and assume responsibility for engineering and geoscience projects in BC. The legislation requires sign-off and sealing by professional engineers. I am aware that the EAO has received past correspondence from APEGBC on this issue. Furthermore, review credibility is increased with Professional Engineers and Geoscientists participation since the APEGBC Code of Ethics (enshrined in legislation) as its first item requires that members "Hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace." The Woodfibre LNG Project by its very nature is a very large engineering project and thus many components need to meet the requirements of the *Engineers and Geoscientist Act*. In my examination of the Application, I could not find any indication that applicable sections were sealed or signed-off by a Professional Engineer. For example, the Preliminary Quantitative Risk Assessment is one the few examples which attributes authorship, but those signatories are not listed as Professional Engineers or Engineering Licensees on the		engaged the services of consulting engineering firms to undertake work related to the Project.	

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			APEGBC website. **Recommendation Ia**: The EAO needs to require the proponent to have a Professional Engineer (or Professional Geoscientist) sign-off or seal all project documents that relate to the practice of engineering (or geosciences), in accordance with the *Engineers and Geoscientists Act* of BC. Alternatively, not to mislead the public or base as review on questionable material, the EAO needs to remove those reports and documents from its review until such time as they comply with the *Engineers and Geoscientists Act* of BC. **Recommendation Ib**: The EAO needs to require all reviewing agencies who submit comments that relate to the practice of engineering (or geosciences), to have their comments signed-off or sealed by a Professional Engineer for Professional Geoscientist). This recommendation in particular relates to the engineering review conducted by the Oil and Gas Commission. Some agencies have correctly attributed professional responsibility.			
1688(ii)	March 23, 2015	Personal Information Withheld	**2. Fisheries Issues - Department of Fisheries and Oceans** The Department of Fisheries and Oceans (DFO) submission dated February 12, 2015 contains 74 wonds. Even a casual observer will understand that the environmental assessment of impacts to fisheries and fish habitat requires DFO's managers to allocate more effort to their fisheries biologists and scientists to review this proposal. Perhaps there has been additional technical review effort "behind the scenes." If there is such "behind the scenes" effort this needs to be posted on the EAO website. DFO used to be a world leader with its Major Projects. Review Unit analyzing the environmental impacts of major projects. DFO needs to reestablish their leadership with a credible science-based review of this project. ***Recommendation 2***: In accordance with federal-provincial agreements regarding environmental assessments, the EAO needs to communicate to the DFO Regional Director General, or DFO Deputy Minister that a credible environmental assessment requires substantially increased DFO expertise. Alternatively, decision-making Ministers, agencies and others will be unable to arrive a credible science-based conclusion of significance of environmental impact for project approval.	EA Process: DFO Review	Woodfibre LNG Limited has met with Fisheries and Oceans Canada (DFO) to discuss the Project, and DFO has provided comments regarding the Application. If an authorization under the *Fisheries Act* is required, Woodfibre LNG Limited will submit a detailed Application to DFO once detailed design of the Project is complete. It is not currently expected that an authorization under the *Fisheries Act* will be required.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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1688(iii)	March 23, 2015	Personal Information Withheld	**3. Water Quality - Environment Canada** The Environment Canada (EC) submission dated February 10, 2015 provides review comments on a variety of topics. This submission, however, misses two important topics within EC's expertise and mandate. Firstly, EC administers Section 36 of the Fisheries Ac that responds to water quality and prohibits the deposit of deleterious substances into waters frequented by fish. Yet EC's submission provides no review of the proposal regarding water quality related to fisheries. For example, disturbance of the project area's currently contaminated soil or marine sediments could likely impact the quality of water frequented by fish. Similarly, the project's operation will introduce large volumes of heated water into Howe Sound. This heated and potentially processed water is both water quality issue (that needs expert examination by EC), and a habitat issue (that needs expert examination by DFO). Many other water quality issues also exist, for example from fueling and bunkering during and after construction. Interestingly and appropriately, EC review comments mention water quality impact to migratory birds, as set out it the *Migratory Birds Convention Act* and its Regulations. These are likely review comments from the expert reviwers at the Canadian Wildlife Service. ***Recommendation 3***: The EAO needs to request EC's Regional Director General, or the EC Deputy Minister, for EC professional scientists and professional engineers to provide review analysis regarding water quality. Alternatively, decision-making Ministers, agencies, and others, will be unable to credibly arrive at a science-based conclusion of sign licence of water quality impacts for project approval.	EA Process: EC Review of Water Quality	All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m^3 (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time. Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L. The effects of the Project on marine water quality have been assessed in Section 5.10 Marine Water Quality of the Application. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments. LNG carriers will not refuel at the Woodfibre LNG terminal, or anywhere else in Howe Sound. Instead, LNG carrier operators will determine a suitable and safe refueling location or anchorage for their LNG carriers subject to fuel availability and local regulations (e.g., in the Far East).	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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1688(iv)	March 23, 2015	Personal Information Withheld	**4. Environmental Emergencies - Environment Canada** Secondly, Environment Canada holds (or perhaps held) considerable expertise regarding atmospheric sciences, meteorology, dispersion modeling, and emergency response. In particular, world-class scientists at the Emergencies Science and Technology Section on River Road in Ottawa provided invaluable and detailed technical review regarding the potentially catastrophic failure mechanisms of the previously proposed LNG storage tank at McNab Creek in the late 1990's. McNab Creek is located a few kilometers distance from Woodfibre. Environment Canada will have this analysis on file. The risk of catastrophic failure and risk to public safety from the proposed McNab Creek LNG storage tank would likely be similar to that from the current proposal. The current proposal, however, uses tankers that move closer to populated areas which adds complexity. ***Recommendation 4:*** The EAO needs to ask Environment Canada's Regional Director General, or Deputy Minister to have its Emergencies Science and Technology Section, as well as other EC scientists and engineers, examine the project from a catastrophic failure, emergencies and public safety perspective.	EA Process: EC Review of Environmental Emergencies	As part of the Working Group process, Environment Canada provided comments on the Application. These comments, along with Woodfibre LNG Limited's responses are provided in the Working Group tracking table, which is posted to the EAO's website.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].
1688(v)	March 23, 2015	Personal Information Withheld	**5. Proponents fails to respond to earlier public comments** The Section 11 Order clearly identifies that the Proponent must respond to all public comments received during the applicable stages of the review. I have carefully examined many of the public comments and the proponent's Public Consultation Report dated October 2014. I could find no response by the proponent or the EAO to the multiple issues I raised in my own detailed comments dated July 27, 2014. Neither could I find proponent responses to any other public comments. In my July 27, 2014 letter I specally requested a reply from the EAO and the proponent how on the important issues raised above are to be incorporated into the Application Information Requirements document. Furthermore, at the open house on January 30, 2015, I provided a copy of my July 27 2014 letter to the EAO Protect Director and requested a response. To date I have received none. ***Recommendation 5a:*** The EAO needs to confirm that the proponent responded to all (applicable) public comments, and make that response available to the public. Alternatively, the EAO must conclude that the proponent did not observe the requirements of the Section 11 order. ***Recommendation 5c:*** The EAO needs to ensure that all public comments from the earlier	EA Process: Public Review	As part of the pre-Application phase, Woodfibre LNG Limited responded to all public comments received during the public comment period. These responses are posted on the EAO's webpage. In addition, Woodfibre LNG Limited submitted a memo describing the changes that were made to the draft Application Information Requirements in response to public comments.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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			consultation period were considered in the final AIR and in the Application. Otherwise the review fails to meet the public consultation and participation provisions of federal and provincial environmental assessment legislation.			
1688(vi)	March 23, 2015	Personal Information Withheld	**6. Public Safety, Hazard, Risk and Catastrophic Failure — Oil and Gas Commission** Public safety for Squamish, the Sea to Sky highway, marine users, and the other populated areas of Howe Sound is perhaps the single most important issue facing this proposal. The Section 11 Order includes this issue within the scope of project and review, and specifically includes the operation of LNG carriers and other supporting marine traffic in Howe Sound within designated shipping zones. However, the Application document presents many "arm-waving" arguments regarding public safely that do little to inspire public confidence. It does contain a preliminary quantitative risk assessment, but it is preliminary. For a credible EAO review of public safety issues the EAO must obtain an expert engineering review of the proponent's proposal. Customarily, the Oil and Gas Commission should fill this role, but it's review comments available on the EAO website provides only minimal review on LNG safety issues. Further, they do not appear to review LNG hazard issues along the coast line of populated Howe Sound. Also many of the unsigned review comments by the Oil and Gas Commission relate to engineering, and as such need to be sealed by a Professional Engineer. ***Recommendation 6:*** The EAO needs to ask the Oil and Gas Commission to provide a complete review comments of Application related to LNG safety, hazard, risk, and catastrophic failure. These review comments as they apply to engineering, need to be signed or sealed by a Protessionat Engineer. Perhaps the Oil and Gas Commission has insufficient capacity or capability to provide comments for this complex proposal.	EA Process: Oil and Gas Commission Review of Accidents and Malfunctions	The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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1688(vii)	March 23, 2015	Personal Information Withheld	**7. Public Safety, Hazard, Risk and Catastrophic Failure — EAO needs to commission World-Class review** For the McNab Creek LNG storage facility review in the late 1990's, the Oil and Gas Commission's review comments were found to be inadequate. Accordingly, the Sunshine Coast Regional District commissioned its own engineering consultants to review the projected which substantially assisted the environmental assessment. Since world-class LNG safety and hazard expetise unlikely is available within the provincial government, the EAO needs to commission such world-class review capability, likely from a private engineering firm. This is particularly true regarding the serious LNG public safety issues for populated areas of Howe Sound. ***Recommendation 7:*** The EAO needs to commission world-class engineering review of all project components related to LNG safety and hazards, and particularly regarding impacts to populated areas of Howe Sound.	EA Process	Woodfibre LNG Limited has engaged experts to conduct a quantitative risk assessment of the accidents and malfunctions associated with the Project. Woodfibre LNG defers to the EAO regarding Recommendation 7.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].
1688(viii)	March 23, 2015	Personal Information Withheld	**8. Marine Transportation — TERMPOL** The application documents informs that marine safety issues will be assessed more comprehensively in the marine risk assessments for the TERMPOL review process (TRP) currently under way, but mistakenly informs that it will "ensure" the safety of vessel transits to and from the terminal to span ocean. Quick reference to the Transport Canada document entitled TERMPOL Review Process, 2014 edition, (http://www.tc gc.r.rmediaidocumentsrmarinesafetyrtp743e.pdf) shows that the TRP is a voluntary process and that allows proponents to have a TERMPOL Review Committee assess the marine transportation components of their project at an early stage of the proposed project. Furthermore, the "TRP is not a regulatory instrument; its provisions, therefore, are not mandatory. There are no approvals or permits issued as a result of the TERMPOL Review Process." Also, the TRP is not a public process, although the final report will be made public when completed. Accordingly, for Woodfibre LNG, the TRP should have been completed "at an early stage of the proposed project" and therefore prior to the Application. It was not; it has not even realty started. Furthermore, the TRP will unfortunately be of little benefit if its recommendations are not enforced through regulatory or EA approval conditions. Furthermore, I understand that the TRP does not consider hazards or impacts on land from an event on an LNG Tanker. This provides another reason for a world-class engineering review recommended above.	EA Process: Review of Marine Transport	The TERMPOL review is a separate process from the EA process, and Woodfibre LNG Limited anticipates that the TERMPOL process will be completed in 2015. The Application includes a mitigation measure to implement the TERMPOL recommendations (M7.2-7). The TERMPOL process does not include a public comment process; however, the final document is made available to the public.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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			Recommendation 8: To help salvage the review to address shipping and public safety, the EAO needs a) to work with the TRP and applicable agencies to ensure the TRP includes public participation components, b) suspend the EA review to allow sufficient time for the TRP to conclude and c) incorporate the TRP recommendations as project approval conditions and provide mechanisms that they can be legally ensured.			
1688(ix)	March 23, 2015	Personal Information Withheld	**<u>9. Terrorism and Security</u>** The threat of terrorism and sabotage of Canada's infrastructure is very real. However, the Application documents do not consider this threat, its impact to public safety and to the environnwnt. When walking at Ambleside Beach in West Vancouver I notice that oil tankers traveling under Lions Gate Bridge now regularly receive naval or police vessel escorts. Will for example, LNG tankers in Howe Sound receive naval escorts? Are naval escorts a good way to combat potential terrorism threat related to this proposal? Is the public at greater risk from a terrorist act because of this project? **Recommendation 9**: The EAO needs to obtain expert analysis from naval, military, and security authorities on the risk of terrorist attack on the project, how to best mitigate against such attack, and whether indeed the project should proceed at the Woodfibre location from a security perspective. This analysis needs to be included in the EA review..	EA Process: Review of Security	Transport Canada's marine security programs, including strategies, programs and regulations, protect and preserve the efficiency of Canada's marine transportation system against unlawful interference, terrorist attacks or use as a means to attack our allies. (see http://www.tc.gc.ca/eng/marinesecurity/menu.htm) In addition, as part of the OGC permitting process, Woodfibre LNG Limited will be required to prepare a Safety and Loss Management Plan, which will include an emergency response plan and a security management plan. In addition, the site will be fenced and a control zone around the marine portion of the Project area will be established. The objective for the control zone and fencing is for public safety reasons, but will also be designed to prevent access by saboteurs. Security for LNG carriers in transit will be addressed by the Canadian Coast Guard and Transport Canada. It is unlikely that an attack on a LNG carrier would successfully penetrate an LNG container and result in loss of containment, given the multiple layers of steel that would need to be penetrated. The consequence and frequency for a worst case scenario for potential loss of containment of LNG on an LNG carrier due to grounding and collision with another vessel is considered in Appendix 11-1 of the Application. Is it not anticipated that penetration of an LNG container on an LNG carrier would result in an explosion. It is not anticipated that a collision can result in damage to more than one container. Additional analysis for marine risks will be carried out during the TERMPOL assessment for the Project. Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].
1689	March 23, 2015	Gambier Island Conservancy - British Columbia	[Please refer to the submission from the Gambier Island Conservancy to the EAO dated March 23, 2015.]	Public Review	Thank you for your letter. Woodfibre LNG Limited has prepared a response to this letter, which has been delivered to the Gambier Island Conservancy. This letter has also been posted on the EAO website as 'Woodfibre LNG Limited Response to the Gambier Island Conservancy Public Comment Submission'.	

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1690(i)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	March 26, 2015 BC Environmental Office Re FortisBC Eagle Mountain pipeline application. Under no circumstance should an administrative body like BCEAO be allowed to make a scientific assessment of a highly scientific matter like LNG without any competent and accredited scientists engaged within the BCEAO organization. Is the BCEAO knowledgeable in LNG science? Has the BC government contracted Sandia National Laboratories to do an assessment of the project? IS BCEAO prepared to evaluate the risk assessment of floating LNG storage in open water, exposed directly to prevailing winds and within a potential earthquake zone, forecasted to have a substantial earthquake within the next 200 years and so close to over 15,000 inhabitants.	Seismic Hazard	Thank you for your comments. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.	
1690(ii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The BCEAO acceptance of Fortis BC being allowed to ship fracked, methane gas from Coquitlam BC to W-LNG is to ignore looking at the bigger picture. North Eastern BC is being destroyed by drilling 50,000 shale rock fracturing gas wells, that will only produce for about 2 years at maximum capacity. The practice of continuously drilling with high power equipment is resulting in earthquakes in the US, Alberta and BC. Many jurisdictions around the world are forbidding fracking. The practice of pumping, with 9000 PSI, water, sand and unspecified carcinogenic chemicals into the earth, followed by pumping the returned toxic, black affluence back into previous drill holes, then sealing the top, and expecting it would remain underground is short sighted. Today's limited scientific research is not recording the detection of seepage of toxic materials into the various aquifers that feed our rivers, our lakes and our drinking water.	Pipeline Hydraulic Fracturing	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	

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1690(iii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	China and many progressive other nations instead, are heavily investing in green energy. Investment globally in renewable energy sectors is increasing. The BC government is so short sighted not to realize that we are once again repeating the mistakes of the past as in the Tumbler Ridge fiasco. To witness the BC government spending our tax money brainwashing BC's people about how safe LNG is, about how profitable the royalties and taxes will be, is alarming. There are not any believable figures or studies completed. Independent scientists and business analysts are totally in disagreement about the BC governments facts and figures provided in paid advertisements. It should be on this point alone that this whole process should be stopped immediately with suspension of any further continuation to the EA process, until credible reports are received, so as then BCEAO can make an informed decision.	Justification of Project LNG Industry	Natural gas is the world's cleanest burning fossil fuel, and plays an important role in reducing GHG emissions globally. However, assessing either the upstream or the downstream effects of the Project on climate change or greenhouse gas emissions is outside the scope of the environmental assessment, as defined in the section 11 order. Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[34]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[35]. China's energy demand increases by 5% annually[36]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[37].	
1690(iv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	FortisBC is also responsible in what appears as a partnership with W-LNG. They are aggressively promoting a less costly, less safe route, to supply gas to W-LNG. The proposal to install a 24 inch pipeline filled with highly flammable explosive compressed Methane Gas (mainly fracked Methane gas) right through populated Squamish is unsafe, unregulated and foolish. The required gas compression station does not fit in the proposed Squamish location in the Squamish Business Park as businesses and residences surround it. The Coquitlam compression station creates severe noise pollution, with numerous complaints. Social economic impacts must also be considered by BCEAO. Protection must be offered for the investment of the many businesses existing in the area currently. Potential future employers will rethink situating their business to the Squamish Business Park. Fortis BC presents a total arrogance in its decision to legally contest the will of the Squamish people and the elected municipal government. The action of applying for a Development Permit to do borehole test drilling in the Squamish Wildlife Management Area in the Squamish Estuary of the Squamish River prior to an approval by the BCEAO is putting the cart before the horse. They must not be allowed to do their destructive work through the Jewel of our Squamish, the Estuary. Squamish Estuary protection was agreed many years ago, clearly stating that the estuary was not to be encroached on. This agreement included the Squamish Native people applauding and supporting it.	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	

[34] BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
[35] ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
[36] Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
[37] National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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			District of Squamish council not only has done the right thing by not allowing premature destruction on behalf of their elected residents, but also in spirit of co-operation with our native citizens of Squamish. This partnership makes for an even bigger majority, which refuses this is ill thought of, and provocative action prior to the EA process completion. Therefore the BCEAO is requested to investigate and make themselves aware that FortisBC studied pipeline routing options. One option was to bring a new gas pipeline over a southern point of the coastal mountains and down in a valley away from populated area, the other route option was along the base of the Chief, again away from population, to a potential compressor station at Watts Point. This would be the more desirable choice, as it is less risk to the population of Squamish. I am requesting to the BCEAO stop the present FortisBC evaluation process, as submitted until that issue is also resolved. Recently, 2 gas line explosions have occurred. Previous recorded incidents and explosions, like in San Bruno CA, valued in over one Billion total in monetary damage, not to mention the human damage and casualties it created, with loss of 38 houses and death and serious burns of many. As well as there has been a recent compressor station explosion in Canada. Questions arise as to if a municipal or provincial government or the gas provider is sued, as having been negligent, possibly even criminal, in permitting it to be placed in a populated area? Questioning would also include if an accident was caused by 1) a negligent fast tracking process, 2) not having risk assessment studies and reports done by globally accredited scientific organizations or individuals. It is paramount the BCEAO and the government of BC assure safety to the public. It is high time to take a break on the fast tracking of any LNG ambitions by the BC provincial government, Fortis BC and W-LN G. The Gas Research Institute Contract #8176 ORI-00/0189 recommends that any new gas line of the size proposed by FortisBC, should be not closer then 660 ft. from populated area. Again we are seeing the cart put ahead of the horse in BC as there is no right of way (ROW) studies, reports or regulations in place regarding a pipeline of this capacity. The last BC government Pipeline Act is only current to Mar 11, 2015 with no publication available as to the current Act. Constructing the a 24 " pipeline as close as 60 ft. near to existing houses, putting possible hundreds of houses and recipients in danger, is unethical and has no economic benefit to Squamish. It will cost the District of Squamish more money, as they will have to provide funding for first responders training,			

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			labour and equipment. FortisBC is not winning any public relations as it is neglecting the domestic supply of Household Gas at a reasonable price and is not providing transportation CNG in the corridor. This is another issue that is unforgivable. Fortis BC is just trying to look out for the big corporations in business, by exploiting our natural resources and not even looking after the citizens of Canada and their future needs. True, deep well natural gas is a national treasure that should be shared first with the inhabitants of Canada. Exploitation should not be expanded to further endanger the native indigenous people of Canada, for the profit of possibly not even Canadian shareholders of a company now proposing the projects.			
1690(v)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	For those not familiar with the catastrophic potential of LNG being spilled accidentally or deliberate, into warm ocean water and with it the possibility of catastrophic potential, please go to www.SquamishMade.com for more information and http://myseatosky.org/ https://www.youtube.com/watch?v=5VvHOw2U97A Gas fire Compressor station https://www.youtube.com/watch?v=BXU9BXhPq9U Gas fire Compressor station Here are some further thoughts and requests by the public of Squamish 1- No storage of LNG on floating worn out dilapidated tankers ships not seaworthy any more, with no authority to report to	Floating Storage and Offloading Unit	The two LNG vessels that form the floating storage and offloading unit (FSO) are equipped with self-supporting Moss Rosenberg tanks. These vessels are and will continue to be maintained in class by the Classification Society during their life cycle, with tests and inspections conducted at regular intervals as part of the survey process. Within Canada, Transport Canada and the OGC will inspect the FSO to ensure the FSO and equipment are safely operated and maintained, and comply with the prevailing rules for the safe handling of LNG. The FSO will undergo extensive surveys and maintenance to ensure the integrity of the tanks including the primary and secondary barriers are fit for purpose. At the time of modification, surveys will be conducted by the Classification Society, with further audits conducted by OGC and Transport Canada as applicable on arrival into Canada.	
1690(vi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	2- Minimum of one Billion dollar indemnity insurance provided by FortisBc for potential explosion of pipeline damage	Liability	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Woodfibre LNG Limited offers the following information on the insurance for the Woodfibre Project: Every vessel that is employed for Woodfibre LNG Limited will carry compulsory insurance for $1 billion under the Civil Liability Convention (CLC) for oil pollution. In the event of a pollution event, and after all reasonable steps have been taken to recover payment of compensation from the owner of the ship or if the owner of the ship is not liable by reason of any of the defenses described in subsection 77(3), Article III of the Civil Liability Convention or Article 3 of the Bunkers Convention, and neither the International Fund or the Supplementary Fund are liable or in the event the claim exceeds the owners maximum liability under the CLC Convention the liability will be covered by the Canadian Ship-source Oil Pollution Fund. Every vessel destined to a Canadian Port will hold a valid contractual arrangement with the Western Canada Marine Response Corporation under the Canada Shipping Act 2001 Part I – Pollution Prevention and Response.	

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1690(vii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	3- Amenity to compensate Robin Rd (potential area of proposed Pipe line and other areas) if allowed to go ahead would be provided with domestic water supply for potential firefighting at a minimum. 4- Warning system installed indicating an automatic shut down of Gas line to alert public	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	
1690(viii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	5-Amenity and training and plan for DOS Fire Fighting capacity	Emergency Plan	The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. In order to prevent accidents and malfunctions from happening, prior to operation of the Project, the Liquefied Natural Gas Facility Regulation requires that Woodfibre LNG Limited prepare a Safety Loss and Management Program that complies with CSA Z276. This program includes a detailed Emergency Response Plan that includes documented emergency response plans, required equipment, training requirements, identification of trained personnel and plans for emergency drills and exercises. It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project. Please also refer to the Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1690(ix)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	6-Open access by public on log books kept by FortisBC or OAGC of any incidents and repair etc. on pipeline 7- Adherence to Gas institute 660 ft. separation from gas line to nearest new or existing inhabitable property 6- All Compressor stations MUST BE a minimum 3 Miles away from any population or developed areas.	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	

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1690(x)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	7- During construction, limit on foreign workers and immediately upon a potential approval to set up trade schooling to have as much local employment potential	Employment	From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/)	
1690(xi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	8- Squamish to receive a CNG gas filling station	CNG Gas Filling Station	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	

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1690(xii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	9- Guarantee that BC Household and transportation Gas supply would not be effected, by higher Spot prices that BC LNG would in the future able to attract on the world market, in other words, a freeze of the cost of Canadian Gas supply, at favourable rate for local consumption.	LNG Industry	The price and quantity of natural gas available to local markets is outside the scope of this Assessment. These factors are tied to markets. Woodfibre LNG Limited notes, however, that National Energy Board considered evidence pertaining to these matters in making its decision to issue an Export License in respect of the Project and determined that "the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends for discovery of gas in Canada" (NEB License GL 304). Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.	
1690(xiii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	10-Full disclosure of Chemicals used in fracking Northern BC with proof that they are non carcinogenic. Regulation that companies providing the gas to FortisBC verifies the source of the gas.	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1690(xiv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	12- BCEAO to publicly release the quantity of comments submitted as well as disclosing how many comments were for or against the WLNG EA application and the FortisBC EA application. 13- Public disclosure of the comments will result in Federal and Provincial governments seeing a potential backlash for both Governments involved, in the future elections results!!! This will be on the historic record for future generations. Governments engaged in heavily promoting useless figures, promoting only the positive sides of LNG and claiming profitability to the people of BC will have second thoughts about selling this country out.	Public Review	Comments submitted to the EAO as part of the public review period are posted on the EAO's website. Woodfibre LNG Limited has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page. A public consultation report will be filed with the EAO in accordance with the environmental assessment process. In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].

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1690(xv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	14- FortisBC has not discussed or proposed any amenity to Squamish in return for destroying our peaceful, quietness, loss of wildlife habitat, loss of enjoyment of living in Squamish, negative impacts of property values and loss of desirability, for future job creators to set up shop in Squamish, due to potential bad air quality, costing the government on health care and diminishing the potential of tourism and pollution of waters of the Ocean and the enjoyment of water sports and fishing.	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	
1690(xvi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	15- Fortis BC appears Not to be aware of the world heritage designation of the Howe Sound potentially, especially with the just recently discovery of Glass Sponge Reefs http://www.eao.gov.bc.ca/pcp/forms/Woodfibre_LNG_form.html Glass Sponge Reefs in Halkett Bay off of Gambier Island http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ Even MLA Jordan Sturdy spoke in Provincial Legislature https://www.youtube.com/watch?feature=player_embeddedHYPERLINK "https://www.youtube.com/watch?feature=player_embedded&v=Rpz8az-WAS0"&HYPERLINK "https://www.youtube.com/watch?feature=player_embedded&v=Rpz8az-WAS0"v=Rpz8az-WAS0< Do the tankers have enough clearance to get over the 9000-year-old reef if W-LNG proceeds?	Glass Sponge Reefs	Woodfibre LNG understands this comment to be addressed to Woodfibre LNG Limited and not to Fortis BC. Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10). Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.	

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1690(xvii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	16-Lack of transparency of ownership and accounting location, with head office in Canada not a foreign island nation and assurance that much in the way of taxes will be paid in Canada.	Corporate Ownership Taxes	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements. Woodfibre LNG Limited will pay a variety of taxes, including income tax, LNG tax, and municipal property tax. Property taxes are paid on the assessed value of the facility and are independent of profit. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead.	
1690(xviii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	17-The already by Fortis BC mapped route over the mountain south of us,rather then through Squamish, is the only acceptable route by the Squamish residents, should this project be further considered.	Pipeline	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html	
1691(i)	March 23, 2015	Personal Information Withheld	Michael Shepard Environmental Assessment Office PO Box 9426 Stn Prov Gov Victoria, BC V8W 9V1 March 18, 2015 Dear Mr. Shepard, RE: WOODFIBRE LNG PROJECT I am opposed to the above mentioned project for the following reasons: 1. There are no other LNG export terminal in Canada due to safety concerns and uninsurable risks. Why would we want to be the first to take on such a s project with such a negative track record?	Safety	Thank you for your comments. Although there are no LNG export facilities currently in Canada, Canada has been safely operating LNG facilities for more than 40 years. In British Columbia, the FortisBC Tilbury LNG Facility in Delta has been in operation since 1971, and the Mt. Hayes Storage Facility on Vancouver Island came into service in 2011. The Canaport LNG receiving and regasification terminal in St John, New Brunswick has been operating as an LNG import terminal since 2008 and has the capacity to distribute 1.2 billion cubic feet of LNG per day. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1691(ii)	March 23, 2015	Personal Information Withheld	2. The proposed owner of the plant (Sukanto Tanoto) himself does not appear to heave a good track record in the business world at all..tax evasion, human rights abuses, back fraud and environmental destruction.	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.	
1691(iii)	March 23, 2015	Personal Information Withheld	3. Woodfibre LNG has no experience with building and operating as an LNG plant.	LNG Project	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG is assembling a team of local and international professional engineers with proven experience in LNG. Project decisions will be made based on what is reliable and safe.	
1691(iv)	March 23, 2015	Personal Information Withheld	4. There would be little economic benefit to Howe Sound (maybe 60 jobs and not all of those would be local, many of those jobs would be from foreign workers).	Local Economy Employment	From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in	

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					Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/) An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD): CONSTRUCTION JOBS • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	
1691(v)	March 23, 2015	Personal Information Withheld	5. We will see little if no royalty from Woodfibre LNG – they would be taxed .5% only on net profit. The government would cap their property taxes and forgive carbon taxes. Special privileges all in the make of big business!	Taxes	Woodfibre LNG Limited will pay a variety of taxes, including income tax, LNG tax, and municipal property tax. Property taxes are paid on the assessed value of the facility and are independent of profit. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead. The Application includes information on the economic benefits of the Woodfibre LNG Project, should it go ahead. • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information see Section 2.6 Project Benefits of the Application.	

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1691(vi)	March 23, 2015	Personal Information Withheld	6. The price of LNG is down in Asia, not up! This makes not sense economically! In 2013/133 the cost was $20/million BTU's and now it is half at only $10/million BTU's.	Economic Justification of Project	As LNG Projects involve significant capital investment which is recovered over a long period of time, final investment decisions (FIDs) on LNG projects are not made lightly, nor are they based on the price of oil or gas on any given day, or even a given year. Rather, FIDs are made based on long-term forecasts and take into account numerous factors, many of which are specific to the project or the proponent(s). Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[38]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[39]. China's energy demand increases by 5% annually[40]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[41].	
1691(vii)	March 23, 2015	Personal Information Withheld	7. A worse case spill from a transiting tanker would be extremely dangerous.	Safety	Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. In the unlikely event there is a spill from an LNG carrier, LNG will never mix with water. Instead, it will quickly return to a gas state, and because methane is lighter than air, the gas will rise and dissipate into the air. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments	

38 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
39 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
40 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
41 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1691(viii)	March 23, 2015	Personal Information Withheld	8. Property values would around the pipeline would be reduced 10-40%.	Real Estate	Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html Woodfibre LNG offers the following information about the Woodfibre LNG Project. The Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. Real Estate Value was not selected as a valued component as the Project site is zoned for industrial use and a change of land use designation and zoning is not required.	
1691(ix)	March 23, 2015	Personal Information Withheld	9. What if the plant exploded, such as the LNG plant in Algeria (Skikda) killing 27 people? Gas pipelines have fire and explosions also, and happen more frequently and can be lethal.	Safety	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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<tr><td>1691(x)</td><td>March 23, 2015</td><td>Personal Information Withheld</td><td>10. The plant itself will produce 142,000 tons of climate warming GHG's annually. This would only make global warming worse! 150 million tons of hot, chlorinated water will be expelled into the Sound annually, not to mention smog and sulphur dioxide.</td><td>GHG Emissions
Seawater Cooling System</td><td>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.
The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.
Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:
<table>
<tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr>
<tr><td>GHG</td><td>80,000</td><td>450,000</td></tr>
<tr><td>NOx</td><td>20</td><td>310</td></tr>
<tr><td>SOx</td><td>17</td><td>17</td></tr>
</table>
As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.
Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the Environmental Management Act.
At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.
All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the Environmental Management Act. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.

The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21^{o}C or 10^{o}C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10^{o}C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1^{o}C above ambient is 125 m^{3} (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time.
Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.
The effects of the Project on marine water quality have been assessed in Section 5.10 Marine Water Quality of the Application. Additional components of the marine environment that have been assessed</td><td></td></tr>
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					include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1691(xi)	March 23, 2015	Personal Information Withheld	11. And how about that 377" tall flare stack with sulphur smell? Not a pretty sight/smell from the highway, water or even mountain top from our new Sea to Sky Gondola! This would be a loss of tourism potential in our area.	Visual Quality Air Quality Tourism	The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the regional assessment area. Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible. Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following: • reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours • monitoring and maintaining natural screening to ensure minimal visibility of infrastructure • providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola. There is no odour associated with LNG facilities. The odour associated with natural gas is an additive called mercaptan, which is a safety feature to warn of potential leaks in homes and businesses. The additive is removed from the natural gas before it is liquefied, and does not produce odours at LNG facilities. Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects. Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. Please also refer to the Air Quality Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1691(xii)	March 23, 2015	Personal Information Withheld	12. Recreational boating would be affected as tankers go by. There could potentially be a 1.6 km travelling exclusion zone around them, within the already narrow waterways of the Sound.	MarineTransport	According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. There is currently no regulation which stipulates an exclusion zone in Canada; however, subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1691(xiii)	March 23, 2015	Personal Information Withheld	13. Using sweater as part of the cooling process is damaging to marine life as salmon, herring and plankton will be sucked into the plant, boiled, chlorinated, then blasted back out! This will not help, only hinder our recent revival of Marine Life in the Sound.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The effects of the Project on marine water quality is assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammals information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1691(xiv)	March 23, 2015	Personal Information Withheld	14. The plant could potentially be larger, 6X larger, meaning 6X the negative impact.	Project Footprint	The Woodfibre LNG Project is licensed to export approximately 2.1 million tonnes of liquefied natural gas (LNG) per year for 25 years. Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. Woodfibre LNG has requested a certain amount of gas from Fortis BC to export up to 2.1MTPA as approved in Woodfibre export licence. Fortis BC has in turn reviewed the engineering of their gas transmission network and derived the required compression to supply this volume of gas to the Woodfibre facility.	

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1691(xv)	March 23, 2015	Personal Information Withheld	15. We need to focus on cleaning up our own air pollution in Canada as opposed to cleaning up Asia's by selling them our fracked fossil fuels	Air Quality	Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[42]. A literature review of key studies of comparing emissions from natural gas and coal can be found here: http://www.capp.ca/getdoc.aspx?DocId=215278&DT=NTV Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	
1691(xvi)	March 23, 2015	Personal Information Withheld	16. My gas bill could potentially go up as a result of exporting our gas as Australia's experience with LNG exports.	LNG Industry	The price and quantity of natural gas available to local markets is outside the scope of this Assessment. These factors are tied to markets. Woodfibre LNG Limited notes, however, that National Energy Board considered evidence pertaining to these matters in making its decision to issue an Export License in respect of the Project and determined that "the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends for discovery of gas in Canada" (NEB License GL 304). Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.	
1691(xvii)	March 23, 2015	Personal Information Withheld	17. The Fossil Fuel age is over – we need to focus on renewable sources of energy if we are going to save ourselves and our planet!	Renewable Energy	Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[43]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[44]. China's energy demand increases by 5% annually[45]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[46].	

42 Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

43 Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

44 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>

45 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>

46 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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1691(xviii)	March 23, 2015	Personal Information Withheld	Weighed against the huge safety risks with liquefying, storing and shipping LNG, lowering property values, reduced air quality, destruction of marine life, disruption to recreational users of the Sound and loss of tourism potential of the region, I am wholeheartedly opposed to Woodfibre LNG. Yours truly,	LNG Project	Thank you for the comment.	
1692(i)	March 23, 2015	Personal Information Withheld	March 22, 2015 Attention: BC Environmental Auessment Office I am writing this letter to protest the application for a LNG plant in Howe Sound. 1. The Process: It Is my understanding that the report by the EAO will not be released to the public until after the decision about this proposal has been made by Cabinet Ministers. This is not a transparent process.	EA Process	Thank you for your comments. Woodfibre LNG Limited defers to the EAO to respond to this comment. Public participation in the Environmental Assessment (EA) process helps to ensure that community values and public goals for community development are considered in project planning and decision-making.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].
1692(ii)	March 23, 2015	Personal Information Withheld	2. I strongly object to the passage of LNG tankers through the glacial flord of Howe Sound, and to large population. Why not twin the existing natural gas pipeline all the way to the west side of Vancouver island, and build a platform there to fill the ships. If we have to. Away from our precious inlets and fiords. Norway can do it. We have the most beautiful fiord in the world. Right here, near to the beautiful city of Vancouver. Which we have spent so much time and money promoting through the World's Fair in 1986, and the Olympics in 2010. We spent money on the Sea to Sky highway.	Marine Transport	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1692(iii)	March 23, 2015	Personal Information Withheld	3. The tourists are NOT coming to Howe Sound to look at giant LNG ships. I strongly object to the proposed method of cooling. The proposed method of cooling is a bold attempt by this company to make more profit at a huge and unacceptable cost to our natural assets. The LNG to be exported is proposed to be cooled at the expense of the environment. 17,000 gallons of sea water sucked into a 1.5 meter pipe every hour at a depth of 25 meters. Really? How could EAO even consider such a cooling system? Please do not allow this archaic method of cooling. A close dloop system should be mandatory. The site is plenty large enough for this, and the company apparently owns more land in behind, if this is not large enough. Bury the pipes and use thermal for cooling. Or wind turbines. The wind comes up in Howe Sound every afternoon. Precious marine water, along with any marine life smaller than 4 inches which happens to be anywhere near the area. Chlorinating the water, then dumping it back into the Sound at a higher temperature, Outrageous risk! When we are concerned about the effects of climate-warming. What possible modelling could be done to illustrate that this method of cooling using and dumping heated marine water back into the Sound will NOT cause harm every hour, everyday?	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1692(iv)	March 23, 2015	Personal Information Withheld	4. Please also consider the following: **Unnecessary Endangerment of Life** Giant LNG Ships have no place in the largest populated area in BC: 80 times per year, minimum 4.5 hours, no one can be on the water. Who will tell the tourist kayakers from other countries that they shouldn't be there? The ones who don't speak English These ships, which cannot stop or turn out of the way when a kayak on the water is in their path are propsed to be travelling up and down the water-80 times per year, at a minimum. Floating risks, so close to the submerged mountains in Howe Sound. Risks 80 times, every year, in a narrow fiord. In winter the gales are fierce. And the fog is very thick. And it rains heavy. Or there is snow. Often.	Marine Transport Safety	According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1692(v)	March 23, 2015	Personal Information Withheld	**Unacceptable interference with Community Economy** What about the ferry traffic coming out of Horseshoe Bay? Right now several daily ferries have to stand in place to wait for other ferries coming in and out of Horseshoe Bay. 80 days of the year, the current traffic would all be Disrupted in favour of the LNG ship. This is catastrophic for all ferry bound communities.	Marine Transport	The assessment of marine transport (e.g. Project-related vessel interactions with BC Ferries) and marine recreational boating activities is included in Section 7.3 Marine Transport of the Application. The Application concluded that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Following detailed discussions with BC Ferries, Pacific Pilotage Authority and BC Coast Pilots, it has been determined that there will be no serious effect to BC Ferries when sharing the waterway near Horseshoe Bay with LNG carriers. Coordination with these vessels will follow normal communication protocols under the Marine Communication and Traffic Services (MCTS). Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. Representatives from BC Ferries were also part of the HAZID identification workshop for TERMPOL.	
1692(vi)	March 23, 2015	Personal Information Withheld	**Loss of Tourism Revenue** We are just now experiencing the incredible ability for nature to restore itself after serious industrialization. We have spent millions cleaning up Britannia. We have seen orcas, herring. Now we need projects that enhance marine rehabilitation. I understand that this company had begun to clean up a degraded site. Please do not allow them to Another part of your government is RIGHT NOW developing a series of marine camping spots on Howe Sound as part of the Trans-Canada Trail. The only marine section. What an opportunity for us to Increase tourism!	Tourism	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1692(vii)	March 23, 2015	Personal Information Withheld	**Please reject** the proposed plant in Howe Sound, the recreation corridor for the Lower Mainland population, as well as a world-class fiord. The danger presented by the LNG ships is unacceptable risk. Why consider jeopardizing the natural asset we have so close to Vancouver. Who wants to bring their children any where near a LNG ship, which is proposed to traverse Howe sound *80 times? Do you? Can we afford such a plan? Realty? Why? Yours truly	Safety	At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents. Please also refer to Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1693(i)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	I wanted to begin my submission by saying that I am a Brackendale resident and the last year has been a very difficult one as my community is very divided. I care deeply about Squamish and Howe Sound and can not understand how such an evasive and potentially disastrous project could have been considered. Many concerned citizens have sacrificed their time to research, attend meetings, protest, and educate others about all the issues. I have found the government and industries lack of transparency, manipulation, and untruths very upsetting. I myself stood outside the "Science Fair" in Squamish peacefully protesting and was cussed at and fingered by men in pick up trucks. I was appalled to learn that teachers were forced to bring school children to this LNG propaganda meeting. School children were told that natural gas was green – omitting to divulge that it is produced from fracking which may potentially be as destructive as coal if one calculates the entire process. Children were told that they could earn an $80,000 salary in the oil industry. How is this conducive to encourage children to continue a post secondary education? Children look to adults as having the answers and knowing more than they do. I have attended the open house by WLNG and Fortis. I found both open houses glaringly lacking in information about the whole process. A half truth can sound much more appealing that the whole truth. A spokesperson at the WLNG open house continually diverted my questions about air pollution and would not honestly address them.	LNG Industry	Thank you for your comments. Woodfibre LNG Limited has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page. A public consultation report will be filed with the EAO in accordance with the environmental assessment process. In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world.	
1693(ii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	My point to illustrate how LNG's Vice President of Corporate Affairs is not truthful comes from Last Friday's CBC Early Edition's show in Squamish by Rick Cluff where interviewed him. Some of Giraud's topics included, vessels in Howe Sound, air emissions, and how green the proposed facility at WF will be. Giraud stated that there will be one LNG ship per 10 days coming into the proposed facility at Woodfibre. He said that there are up to 12 vessels or more in Squamish's port but did not specify daily, weekly, or monthly. I emailed Squamish Terminal and the reply that I received is contrary to what Giraud stated even if he meant monthly. Squamish Terminal stated that on average they receive 6 – 8 ships per month from 165-208 meters in length of which 1 – 2 are the larger ships (208m). He also neglected to mention that the LNG ships are significantly larger than any ships currently sailing down Howe Sound into Squamish. The latest information that I have regarding the size of LNG ships is 315m long and 50m wide. We have no guarantee that the facility will not increase production and therefore the number of ships.	Marine Transport	The number of LNG carriers visiting the site will correspond to the export capacity of the Woodfibre LNG Project. The volume of LNG authorized to be exported form the Project is established by the Export License associated with the Project (Licence GL-304). Accordingly, Woodfibre LNG has estimated the number of LNG carriers visiting the site to be 40 LNG carriers per year. The LNG carriers used for the Woodfibre LNG Project will be approximately 290 m long. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to the Marine Transport and Public Safety information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1693(iii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	I am also concerned about his glossing over of the green house gas emissions that he stated will possibly be emitted from the plant. We know that over 120,000 tonnes per year (although they keep changing this number) are projected which will blow into Squamish and impact our community.	GHG Emissions	Woodfibre LNG Limited is of the view that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads over the same time period[47]. The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world. In its environmental regulations, the provincial government has set out standards that all LNG facilities must meet, and the Woodfibre LNG plant will always do better. At peak capacity, the Woodfibre Project will have a GHG intensity of 0.059 t CO2e per tonne LNG; in the Greenhouse Gas Industrial Reporting and Control Act, government has set a threshold of 0.16 t CO2e per tonne LNG. As part of the Application air dispersion modelling based on planned activities and equipment use were undertaken to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria. Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health. Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG response to public comments.	

[47] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1693(iv)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	If the cooling system is so green why will it kill countless organisms in Howe Sound which will be swept onto the screens and the smaller organisms will go through the screens (all being killed) along with over 3 million gallons of water hourly. This system was banned in California and another European country.	Seawater Cooling System	In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[48]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System Information Sheet that has been prepared as part of the Woodfibre LNG Limited Response to Public Comments.	

[48] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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<tr><td>1693(v)</td><td>March 23, 2015</td><td>Personal Information Withheld - Brackendale, British Columbia</td><td>The Air: I am concerned about the air emissions from the plant. I am concerned that there are not stringent enough regulations in place that will prevent the plant from releasing GHGS. As a resident it is not acceptable to breathe polluted air. The air can really stagnate in Brackendale. Who is going to monitor and who is going to enforce GHG levels? When Woodfibre was in operation according to a former employee they would dump toxic chemicals at night. Residents had trouble with asthma from the air pollution but nothing was done to reduce this.</td><td>Air Quality
GHG Emissions</td><td>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.
Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:<table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.
As part of Woodfibre LNG's Environmental Assessment Certificate Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.
Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the Environmental Management Act.
At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.
Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health.
Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG response to public comments.</td><td></td></tr>
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1693(vi)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	The Water: I am concerned about the vast quantities of water being processed through the cooling system. Even though WLNG claims that the chlorine will be less than drinking water they do not consider the cumulative effects of vast quantities of water that will be processed every hour 24 – 7. I am concerned with the countless numbers of sea life that will be killed through the cooling system. Howe will the changes to the water affect the salmon, herring, orcas? There is a rare, valuable, fragile glass sponge reef that the ships should not be allowed to travel near as have been preserved in other Canadian west coast areas.	Seawater Cooling System	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1693(vii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	The LNG Vessels: I am concerned that there are not sufficient regulations in place. Sandia Labs provides the standards for the American LNG tankers and at the very least our standards should be as stringent – not less so that the ships are allowed to travel down Howe Sound. These regulations need to be scrutinized that they are not formed so that the project can go through regardless of safety.	Marine Transport	LNG shipping is absolutely safe. In fact, LNG has been shipped for more than 50 years around the world without one incident of loss of containment. It's also important to know that Howe Sound has been an established shipping route for more than a century, and that it is well suited for the movement of LNG. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Siting of the Woodfibre LNG facility complies in every way with SIGTTO guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. Narrow channel/waterway TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way	

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					narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel. SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m. *LNG Carriers & Howe Sound Shipping Channel / Route* • An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs. • Howe Sound at its narrowest along the shipping route is 1440 metres, or4725 feet. • The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet, and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. *Additional Information* Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.	

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1693(viii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	The Plant: What regulations are in place in terms of safety? What if a worker accidentally starts a forest fire? Do we have air bombers that can put it out or will it just burn. Can a fire be put out if there is an explosion at the plant?	Emergency Response	The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015.In order to prevent accidents and malfunctions from happening, prior to operation of the Project, the Liquefied Natural Gas Facility Regulation requires that Woodfibre LNG Limited prepare a Safety Loss and Management Program that complies with CSA Z276. This program includes a detailed Emergency Response Plan that includes documented emergency response plans, required equipment, training requirements, identification of trained personnel and plans for emergency drills and exercises. It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project. In accordance with provincial legislation, Woodfibre LNG Limited will be required to prepare a Fire Preparation Plan under the Wildfire Act and Wildfire Regulation. The Fire Preparation Plan addresses fire outside of the boundaries of the Project. To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia. In addition, Woodfibre LNG Limited is required to prepare a Construction Emergency Response Plan (ERP). The Construction ERP will describe best management practices and procedures for preparing for and responding to fires, including wildfires. Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
1693(ix)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	What other kinds of pollution associated with the running of the plant are going to occur?	Effect of the Project on Environment	As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — was undertaken to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria. All discharges to the marine environment will comply with applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. Section 5.10 Marine Water Quality assesses the potential Project-related effects to marine water quality. The Application concluded that there, with mitigation measures, there are no Project-related adverse effects to marine water quality.	

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					Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15) and Marine Benthic Habitat (Section 5.16). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
1693(x)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Are the workers skilled and able?	Employment	From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also have an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/)	

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1693(xi)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	What about objective hazards such as earthquake and slides?	Seismic Hazard	At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.	
1693(xii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Why has there not been any information?	EA Process	Woodfibre LNG Limited has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page. Consultation Overview: • 7 Open Houses, attended by more than 870 people • 1 Community Roundtable on Gambier Island, attended by 53 people • 10 Small Group Meetings, involving more than 200 people • 2 Telephone Town Halls, 765 participants • 310+ Stakeholder Meetings • 5 Newsletters • • Askwoodfibrelng.ca website, allowing people direct access to project experts • Regularly monitored Project Information Line • Regularly monitored Project Email Address, info@woodfibrelng.ca • YouTube Channel	

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1693(xiii)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Is any freshwater going to be used and if so what are the effects to fish?	Effects of the Project on Freshwater Fish	Woodfibre LNG Limited has committed to maintaining minimum instream flow releases, which will be determined by a qualified professional. This means that the water licence could not be used to capacity during low flows, and flows that are protective of fish and fish habitat will remain in Mill Creek. More information is included in Section 5.9 Water Quantity and Section 5.15 Freshwater Fish and Fish Habitat of the Application.	
1693(xiv)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Floating Storage Vessels: They are proposing decommissioned ships. Are these ships up to regulations? Are they robust enough to withstand storms while tethered? The waves and wind are strong on a regular day and storms can be intense. What if the floating ships bangs into nearby structure. Decommissioned ships can have stress fractures and toxic paint.	Floating Storage and Offloading Unit	Woodfibre LNG Limited will use two existing LNG carriers as the floating storage and offloading unit (FSO). The FSO will store and offloaded the LNG to LNG carriers for export. The advantage of using LNG carriers for storage is that they are designed to withstand the harshest oceanic environments, including some of the most demanding like the North Atlantic and North Sea. Additionally, the cargo tanks of LNG carriers are designed to very high load requirements because they need to withstand the stresses of internal LNG motion during sailing in any weather condition, not once but over and over again for the vessels lifetime. By placing these vessels in a standstill condition and in an environment such as Howe Sound, where LNG motion will also be minimal, they are more than capable of remaining there safely for long periods of time. In addition, floating storage is isolated to the effects of earthquakes, an important design aspect to consider when building in the west coast of Canada. All LNG ships are designed and built under the most stringent international requirements and under the watchful eye of Classification Societies (like the America Bureau of Shipping (ABS) or Lloyd's Register) that approve the designs and supervise the construction of any ship intended to sail in international waters Classification societies also have stringent inspection regimes during the ships lifetime that all ships have to comply with in order to be allowed to sail. The ships intended for use as the FSO were built and maintained under the regimes of ABS, and ABS will also approve any new designs and supervise the conversion of these two ships to ensure that they are fit for the use intended. A maintenance program will also be put in place to ensure the safety of the cargo tanks and the integrity of the hull is maintained throughout the FSO's lifetime. The vessels will be converted in such a way that they are certified to remain on side permanently; therefore all inspections and maintenance will be carried out on site. This is not a new concept and has been applied in the offshore industry for a long time. Most antifouling paints rely on the movement of water along the hull in order to release the antifouling agent, and are intended to avoid the growth of fouling organisms that increase water drag along the hull and increase fuel consumption by the vessel. Antifouling agents additionally reduce the risk of transferring organisms between marine ecosystems. Because these considerations do not apply to the FSO, Woodfibre LNG Limited is currently investigating alternate solutions that are suited for its intended use and for the Howe Sound environment. The two ships will be permanently joined together so they become a single hull, and the FSO will use a permanent mooring that will not allow the vessel to detach even in the most severe weather conditions. However, in the very unlikely scenario that the floating storage detaches (e.g., during a seismic event), it would be guided out of danger by tugboats to a safe location.	

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1693(xv)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Construction: What costs to the environment will be associated to the construction phase? How do we know that the remediation of the site is being done as environmentally safely as possible?	Effects of the Project on the Environment	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	
1693(xvi)	March 23, 2015	Personal Information Withheld - Brackendale, British Columbia	Visual Impact: The visual impact of the lights and flares will diminish the views of Howe Sound from all people who travel the highway or climb in the adjacent mountains.	Visual Quality	The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the regional assessment area. Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible. Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following: • reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours • monitoring and maintaining natural screening to ensure minimal visibility of infrastructure • providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola.	

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1694	March 23, 2015	Bruce Wilson - Squamish, British Columbia	I am strictly against the LNG project. I support almost everything about it except one key point that forces me to reject the proposal. This project enables fracking. In the process of fracking 99% of the solution pumped into the ground is water and the remaining 1% is chemicals. These chemicals will contaminate our underground water supply. This may not be evident for 5 years, 15 years or 50 years, but it WILL come out somewhere. I am not a tree hugger or an environmentalist. But when the process contaminates a basic necessity of life that we all need, I say HELL NO!	Hydraulic Fracturing	Thank you for your comment. Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1695(i)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	This document outlines my comments on the Woodflbre LNG (WLNG) project proposed for Squamish. Please accept my apology for the poor grammar and spelling; there has been a lot of material to digest, and I have put this together rather quickly. I think it may be useful to provide a bit of personal context for my comments. I am a software consultant that moved to Squamish 5 ½ years ago. I was drawn by the natural beauty, and the opportunities to play in nature. I recently completed 2 years as the Chair of the Squamish Chamber of Commerce. I am still a Director for the Chamber of Commerce, as well as "Inside Edge", Squamish's 250+ member, "knowledge-based Industry Association". I served as the Chamber's representative on the District of Squamish's LNG Committee. However, my comments and questions reflect my own perspectives on the project after being very involved in the process, and very connected to a wide variety of economic interests. Although I was initially supportive of the project, I have since determined that on balance it doesn't make sense for Sqamish or BC. Although I do share the environmental concerns of many others (and although the environment can't be fully separated from the economy) I am primarily opposed to the project for economic reasons. Despite my opposition, I always try to keep an open mind. Having read through significant sections of the EA application, I feel there are a number of unanswered questions. I will leave my mind open for a different perspective that more complete information might provide. More than some other projects, I think comprehensive detailed information is critical to	Corporate Responsibility	Thank you for your comments. The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements. Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met.	

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			evaluating this project and mitigating our risks. WLNG is a subsidiary of Sukanto Tanoto's holdings. His companies have a conviction for tax evasion, and his pulp and paper company APRIL seems to have run afoul of at least one key trade association. There seems to be many claims of human rights, worker rights, and terrible environmental practices against him. I don't possess the resources to assess the validity of all of these claims. However, given the reputation of this proponent, it is prudent to ensure that important commitments are recorded in the EA application and conditions (if a certificate is granted). That is our best chance to hold this proponent to account. This is part of the reason why I am asking for a lot more detail regarding a number of areas of the project.			
1695(ii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I had a fairly deep look at section 11.0 and appendix 11-1 of the application. I don't believe it adequately analyzes or addresses the risks of forest fire. The application does acknowledge: *"While it is unlikey that a fire would extend beyond the boundaries of the LNG facility, there is a remote possibility that a wildfire could ignite surrounding vegetation, which could result in broader effects on vegetation and wildlife. The potential for adverse effects of the fire to ecological receptors varies with location and size, and time of year. A large fire that spreads beyond the Project footprint during summer could result in long-term consequences."* However, the application only assesses the probability of fire events that will pose a human risk beyond the boundaries of the project property. The challenge is that there is vegetation contiguous within and without the project boundaries meaning vegetation fire that begins inside the property could theoretically spread outside. The vegetation within the project boundaries is well with the much higher-risk areas for explosion or fire. Furthermore, a number of the wildlife mitigations in section 22.0 of the application speak to retaining as much vegetation on site as possible. While this maybe positive from a wildlife habitat and visual aesthetic perspective, it would seem to significantly increase wildfire risk. Part of the fire/explosion risk assessment seems to rely on some average temperature values taken from a (seemingly) arbitrary website. Average temperatees from other better-known sites list average temperatures that are significantly higher. Precipitation levels do not seem to be considered. My understanding is that fire risk is strongly tied to precipitation. And, I believe that consecutive days of high temperatures have more impact on fire risk than average temperature in a given month. We have had very dry summers in Squamish, with sustained periods of high temperatures, notwithstanding monthly average temperatures.	Forest Fires	Prior to operation of the Project, the Liquefied Natural Gas Facility Regulation requires that Woodfibre LNG Limited prepare a Safety Loss and Management Program that complies with CSA Z276. This program includes a detailed Emergency Response Plan that includes documented emergency response plans, required equipment, training requirements, identification of trained personnel and plans for emergency drills and exercises. It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project. In accordance with provincial legislation, Woodfibre LNG Limited will be required to prepare a Fire Preparation Plan under the Wildfire Act and Wildfire Regulation. The Fire Preparation Plan addresses fire outside of the boundaries of the Project. To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia. In addition, Woodfibre LNG Limited is required to prepare a Construction Emergency Response Plan (ERP). The Construction ERP will describe best management practices and procedures for preparing for and responding to fires, including wildfires. Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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			We have seen frequent, "extreme", fire risk hazard days where no camping fires have been allowed. If there was a significant fire started at WLNG, the impacts could be far reaching. The probability of such fires and appropriate mitigations should be analyzed with relevant and accurate temperature and precipitation data. Do we need to remove vegetation? Do we need additional municipal and/or Provincial firefighting resources, equipment, or training (currently no such things are outlined in the application)? And what would the impacts of a major forest fire be to: • The forestry industry • Tourism (in particular the Gondola) • Risk to Squamish and Squamish Nation town and heritage sites? • Vancouver Island natural gas delivery • IPP's (Independent Power Projects) • Dams • Hydro Infrastructure and Service • Fisheries			
1695(iii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Although WLNG itself may not have a massive impact on GHG's/climate change, its impact will not be insignificant. The application attempts to argue that since WLNG's carbon footprint will be small relative to global GHG outputs, it can be considered insignificant and its contribution to climate change can be ignored. The problem is that relative to global values, any single project seems relatively insignificant. But if every project was truly insignificant, then there would be not GHG/climate change. The fact that there is climate change means that all those really small projects make a difference. The GHG impacts of projects cannot be dismissed. In Squamish we are facing $10's or $100's of millions of money for diking infrastructure to deal with sea-level rise as a result of climate change. The pine forest beetle has been able to thrive (and decimate BC's forestry industry) due to climate change. Forestry is a critical component of Squamish's economy. Hot, dry seasons (exacerbated by climate change) further threaten BCs forestry industry through hampered growth and forest fires. Last year BC spent 4 times its budget fighting forest fires and had to import fire fighters from other provinces to try and keep up. Neither or municipal nor provincial taxation or royalty regimes have clearly accounted for these costs directly associated with projects such as WLNG. It seems to go against our economic interests in terms of forestry, tourism, other industry, and taxation to support WING or the broader LNG industry.	GHG Emissions Climate Change	Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period[49]. Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.	

[49] Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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1695(iv)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Although many make the argument that (W)LNG is good because it will create jobs, the number of long term jobs created is relatively small. The Woodfibre pulp mill employed 750 people at its peak, and 325 when it was shutting down. WLNG proposes to employ only 100 workers. There is nothing that I can find in the EA application that examines how many workers and what taxation revenue we might see from alternative projects in Squamish. It is not reasonable to assume that WLNG is Squamish's only opportunity for jobs and taxation. What needs to be understood is whether this is among the better ways to achieve employment and taxation, or will it end up hampering us in the long run? A more detailed socio-economic analysis could help sort that out.	Employment	Woodfibre LNG Limited respectfully submits that this comment is outside the scope of an environmental assessment certificate application process. The Application is designed to assess the current Project, and does not assess potential alternative uses of the site. It is worth nothing that Woodfibre pulp mill closed in 2006; however, if the Woodfibre LNG Project goes ahead it will: • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. LONG-TERM OPERATION JOBS • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. *Indirect impacts arise from changes in activity for suppliers. **Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses. Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the project go ahead. The Environmental Assessment Certificate application includes information on the economic benefits of the Woodfibre LNG project, should it go ahead. $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.	

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1695(v)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Somewhat tied to the issue of forest fires, are the issue of earthquakes and dams. The application speaks to doing further analysis and sorting this out later. It speaks to a known insufficient dam above the project. The hazard isn't just the failure of a dam, or an earthquake, it's also the resulting fires spreading to the forest that are a concern. Risk probability, and mitigations need to be analyzed and agreed upon before a certificate is granted. The public should have input on what could be significant risk to their safety and economy.	Seismic Hazard	Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek. • Buildings will be constructed at different elevations that correspond to their risk category in case of flooding. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. • Project components will be designed to accommodate a sea level rise of 0.5 metres.	

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1695(vi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	There are significant gaps around employment plans and socioeconomic impacts of the projects. In some parts of the application, there seems to be an assumption that workers will find accommodation in Squamish. Other places seem to suggest a large foreign workforce, and the bulk of the workforce being bussed in from Vancouver.	Employment	From the very start, Woodfibre LNG has committed to building a Project that's right for Squamish. That means working closely with the community to ensure Woodfibre LNG hire a quality local workforce and contract with local businesses and suppliers wherever possible. The primary source of information for Labour Market information (Section 6.2 in the Application) were phone interviews with municipal and provincial departments responsible for labour, economic development and marine use; local and regional economic development corporations; chambers of commerce; and tourism associations and tourism operators. Baseline economic data were collected from a range of information sources, notably Statistics Canada. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment. Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project. Woodfibre LNG also held a Business Information Session in Squamish in November 2014, where more than 100 local businesses and contractors came to hear what they could do to work on the Woodfibre Project. Woodfibre LNG also has an online Business Directory to help ensure local contractors and businesses have the latest information on upcoming contracts and opportunities. For more information, you can visit the website: (Link: http://www.woodfibrelng.ca/work-with-us/)	

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1695(vii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Have the GHG impacts of a large number of commuting workers been factored in? As far as I can tell, those numbers are a necessary part of assessing a project's GHG impact, but they have not yet been included.	GHG Emissions	Vehicle traffic related to workers traveling to and from the Project ferry terminal on the Sea to Sky Highway 99 was not included as such traffic is outside the scope of the Project, and outside the study area. Responsibility for such traffic is assumed by the Ministry of Transportation and Infrastructure (MOTI) and emergency service providers. Woodfibre LNG Limited has undertaken analysis showing that at a reasonable worst-case, the capacity of the Sea to Sky Highway will not exceed the design capacity (MOT 2003) during the peak times staff might be using the highway. A Traffic Management Plan will be developed for the Project. This Plan will include guidance for the management of Project associated traffic, including potential for car-pooling and commuter bus service initiatives to reduce the number of vehicles on the road each day. For example, during Project construction and operation, Woodfibre LNG Limited will consider the use of employee buses and vans from designated locations in Metro Vancouver and Squamish to decrease the number of cars on the road at shift change, Woodfibre LNG Limited will consult with the District of Squamish and the SLRD in developing the Traffic Management Plan.	
1695(viii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The application talks about EPCM's sorting out housing for construction workers, including pre-booking hotels. Squamish has a 0% rental vacancy, and our hotels are full in the summer. We have received international attention (CNN, New York Times) for our Gondola and other attractions in the past year, and have begun, the expensive process of rolling out a new brand. We cannot afford to have construction workers displacing tourists for the next couple of critical summers. If tourists can't book a room, they're likely to forget about Squmaish in following years when we may not have as much international focus. We may lose the value with all of our recent hard work in building Squamish as a tourism destination. It's also important to remember that in Squamish, tourism isn't just valuable for immediate tourist spending. It is a key factor in growing that is helping to drive Squamish's current success and growth. They find out about Squamish through tourism, and then decide that this is a great place to live, work and play. If construction workers are simply bussed to and from Vancouver and the construction site, our local businesses, restaurants, shops, etc) will miss much of the economic benefit of this construction population. Athough they do have some downsides, work camps may make more sense to minimize transit-related GHG's and time, and maximize local economic benefits. Admittedly, any option will have significant impacts and it is important that our business community be able to comment on them as part of the EA process. Since options have not been detailed yet, that is impossible to do. I look forward to seeing more detaill and analysis on these topics.	Housing	Woodfibre LNG Limited is of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation. Supply and demand of housing (including cost) is addressed as part of the Application, in Section 7.2 Infrastructure and Community Services. The assessment determined that the effect to the housing and accommodation sub-component is expected to be negligible. Woodfibre LNG anticipates sourcing the majority of its direct construction employment, approximately 60% (1,067 FTE jobs) from the local labour force (Metro Vancouver to Whistler). Squamish's labour force totaled 10,270 workers in 2011 (Statistics Canada), and the construction industry was the largest labour force sector in Squamish with 1,430 workers (14.0%). Given the large pool of workers in Metro Vancouver (1,363,300 workers in 2013), it is anticipated that Metro Vancouver would be the main source of construction workers, accounting for approximately 55% of direct construction employment.	

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1695(ix)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The Squamish Chamber of Commerce recently had a professionally completed survey of its membership regarding various advocacy issues. There was very strong support for more industry in Squamish. However, when asked what, "industry", meant, there was a very wide variety of definitions. While a few were inclusive of WLNG, many excluded options like WLNG from their definition. Light manufacturing and green industry were near the top of the list. Furthermore, when asked about WLNG specifically, half of the membership was not in support of the WLNG project. The Chamber has hosted luncheons with the proponent and pro-LNG government representatives. Chambers are traditionally supportive of this sort of project. The lack of support for this project in the Chamber membership suggests that a sufficient economic case for the project has not been made and/or a number of members are concerned about negative impacts the project may have on their business. As (partially) noted in the WLNG application, Squamish has a growing number of highly-educated and well-paid entrepreneurs and workers. While some commute, more and more are finding ways to work in and from Squamish and are starting businesses here. What is not captured in the WLNG EA application is the feeling amongst a number of these people that WLNG does not conform to the values that attracted them to Squamish, and that will allow them to build the sorts of businesses and attract the kinds of employees they want to attract. Some may debate the validity of this, but this does seem to be a strong perception, worthy of investigation.	Local Economy	Woodfibre LNG Limited has committed to carrying out an Economic Impact Study to gain a deeper understanding of how the Project may affect the economy. The scope of this study will be developed in conjunction with the District of Squamish. The Public Consultation Reports posted on the EAO's webpage describe community consultation undertaken by Woodfibre LNG Limited. The May 2015 version of the Public Consultation Report includes a preface describing public perception of the Project.	

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1695(x)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	The EA application suggests that because neither the District's LNG committee nor Council has yet made a formal statement on LNG, and because it is consistent with the District's zoning and OCP, it can be considered beneficial. While the project may be consistent with part of the OCP, it also seems to be inconsistent with a number of the goals around environmental stewardship and clirnate change. LNG may have a marginal (debatable) benefit over coal if the whole energy lifecycle is considered, but there are no guarantees it will replace coal. If it displaces renewable energy, it is not a good thing (environmentally or econornically) and so it is not clear that it is fully consistent with the OCP. Furthermore, a majority of the council elected is not supportive of WLNG. Our new mayor is opposed to the project. This together with the perception of the Squmish Chamber of Commerce members, and the perceptions of a number of budding entrepreneurs (the leaders of tomorrow's economy) suggests that a much more thorough socio-economic analysis of the project is required. The assertion that the project can be considered beneficial economically is at best, premature. It may be that there are things we can/should do to mitigate possible impacts on other businesses with contradictory values, but we need a better analysis to understand that.	Justification for Project	The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. As noted above, Woodfibre LNG Limited has committed to carrying out an Economic Impact Study to gain a deeper understanding of how the Project may affect the economy. The scope of this study will be developed in conjunction with the District of Squamish.	
1695(xi)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	Related to some of the above, a claim is often made that LNG it "transitional", and renewable options like solar aren't ready for mass consumption yet. However we also hear that LNG will provide revenue for generations, and we're seemingly reorganizing our education system around trades training mostly to support an LNG industry. That doesn't seem very transitional; it seems like a long term strategy. This is in the face of fast and furious advances in solar, wind, battery, geothermal, and bio-fuel technologies in other parts of the world. ... advances that seem to be occurring everywhere except Canada. Squamish needs to build industry that will leave it competitive in the future. This is a big picture philosophy, but it also relates to Squamish directly. With its entrepreneurial culture, values, and location it is particularly suited to compete in modern (renewable) energy development.	LNG Industry	Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%[50]. The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand[51]. China's energy demand increases by 5% annually[52]. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)[53].	
1695(xii)	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	A few final thoughts… I have come across many references to CSA 2276, regarding LNG siting and safety, yet I did not see any reference to this in the WLNG application. Will this be followed by WLNG,	CSA 2276Exclusion Zones	The Project will be designed in accordance with CSA Z276. Please refer to Section 2.2.5.2 Project Design Legislation and Standards of the Application for a discussion of CSA Z276. There is currently no regulation which stipulates an exclusion zone in	

50 BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>
51 ICIS. China Natural Gas Annual Report <http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>
52 Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>
53 National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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			and if not isn't that cause for concern? Related to this, I found this document: htto//a109.aovfx-ca/anosdataienicidocurnentsio2141113166769072 6 77a24262R:18941329c009dOc7 dcc9544.pdf which discusses among other things 250m-750 m exclusion zones around LNG carriers (partly based on Sandia labs research). I've also come across LNG shipping regulations for port and/or ship exclusion zones from 50-3000 m. Some of these exclusions are regional regulations, and some seem to be implemented by ports and harbours. Although Canada may have limited regulations around exclusion zones, it seems that many other jurisdictions do. I would like to see some analysis on why this is not needed here, and what the impacts would be if WLNG adopted port, harbor and shipping exclusion zones that are of a higher standard, on par with the top jurisdictions internationally. Ultimately for me, I think Squamish (and BC) can develop a stronger economy through other means than WLNG. However, I look forward to seeing more detailed info around: • Forest fire hazards and mitigation • Socio-economic impacts • Exclusion zones • Construction worker planning • Dam/natural hazards and mitigation		Canada; however, Woodfibre LNG will complete a voluntary Transport Canada Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) for the Project. The review will include a comprehensive risk assessment to ensure safety of vessel transits from terminal to open ocean; the development of recommendations to improve safety and minimize risk; and, the development of detailed safety procedures and emergency response plans. Subject to the recommendations of TERMPOL Woodfibre LNG Limited would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvers at very short notice.	
1696(i)	March 23, 2015	Robb Schultz - Bowen Island	March 21, 2015 Woodfibre LNG Processing and Export Environment Assessment Comments, Concerns and Questions I am very concerned about many negative impacts from the proposed Woodfibe LNG Processing and Export Application in Howe Sound. My wife Bonny and I have lived as permanent residents on Bowen Island for the past 42 years. We face Collingwood Channel where we used to catch coho salmon, until they became nearly extinct. For many years industrial pollution was dumped from pulp mills, chemical plants, the Britannia mine and other industries which sadly polluted our waters, killng fish and marinelife throughout Howe Sound. My wife Bonny and I have lived as permanent residents on Bowen Island for the past 42 years. We face Collingwood Channel where we used to catch coho salmon, until they became nearly extinct. For many years industrial pollution was dumped from pulp mills, chemical plants, the Britannia mine and other industries which sadly polluted our waters, killng fish and marinelife throughout Howe Sound. Surprisingly the past years have brought a steady environmental clean-up of Howe Sound, assisted	Marine Transport	Thank you for your comments. LNG shipping is absolutely safe. In fact, LNG has been shipped for more than 50 years around the world without one incident of loss of containment. It's also important to know that Howe Sound has been an established shipping route for more than a century, and that it is well suited for the movement of LNG. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Siting of the Woodfibre LNG facility complies in every way with SIGTTO guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL. *Narrow channel/waterway* TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for	

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			by industrial plant closings which triggered the return of herring, along with salmon, dolphins, killer whales, seals and other sea life including a humpback whale. One morning, I witnessed our first humpback whale, as it swam slowly past our home on Collingwood Channel. I have serious concerns and questiion the advisability of a Woodfible LNG processing, storage and tanker traffic in Howe Sound The re-industrialization of Howe sound by the proponent's Woodfibre LNG operations is simply unacceptable because of environmental, transportation, tourism and safety constraints in Howe Sound. This is not the right place for the proposed LNG Operation at Woodfibre. My Specific Concerns: !.Transportation Conflicts Between LNG Tankers and BC Ferries, Pleasure Boats, Tug & Barge Traffic, Log Tows, Coastal Freighers, Cruise Ships in Howe Sound. There will be serious traffic and safety conflicts between LNG Tanker traffic in Howe Sound and 60 BC Ferries sailings a day. In addition to BC Ferries, Howe Sound is used for work boats such as tugboats pulling log barges, wood chip barges, train and truck barges and log booms. Also there are fish boats, water taxis, coastal freighters and in summer months Alaska cruise ships pass on both the East and West sides of Bowen Island. These are exactly the same routes given for the LNG Tanker traffic to and from Woodfibre LNG plant. Re-routing existing traffic will be very costly and inconvenient. Potential collisions day and night are a definite risk. Serious accidents with loss of life have happened in the past and they can happen again in the future. Howe Sound is already busy with growing boat traffic of all sizes both day and night, summer and winter. It is far too narrow a waterway to safely accommodate LNG Tankers with or without safety exclusion zones around them. Consider the risks to all existing and future marine traffic in Howe Sound.		a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel. SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m. *LNG Carriers & Howe Sound Shipping Channel / Route* • An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs. • Howe Sound at its narrowest along the shipping route is 1440 metres, or4725 feet. • The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet, and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. *Additional Information* Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Please also refer to the Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1696(ii)	March 23, 2015	Robb Schultz - Bowen Island	2. Refuelling LNG Tankers in Howe Sound Re-fuelling LNG Tankers will bring loaded oil tankers and barges into Howe with the potential for oil spills and collisions.	Refuelling	LNG carriers are typically duel fuel, and run on the boil off gas i.e. methane from their storage tanks. Bunker fuel is typically used only as a backup fuel, and LNG carriers on average carry between 2,000 and 3,000 tonnes of bunker fuel. All oil tanks such as fuel oil tanks and lube oil tanks are protected by double hull construction on LNG carriers. LNG carriers travelling to and from the Woodfibre LNG terminal will not be refueled with bunker fuel at the Woodfibre Terminal in Squamish or within Howe Sound. LNG carrier operators will determine a suitable and safe refueling location or anchorage for their LNG carriers subject to fuel availability and local regulations.	
1696(iii)	March 23, 2015	Robb Schultz - Bowen Island	3. Negative Environmental impacts of LNG Processing ,Compression, Storage and Loading at Woodfibre plant. Natural gas cooling and compression, turning it into LNG, requires massive amounts of energy, generating tremendous heat. The proponent plans on a cooling system using high volume one time through seawater pumping. The exit temperatures of used cooling water could go up by 10 degrees. Also the pumping of millions of gallons of warmed water back into the ocean will likely be fatal to fish and sea life. Also fish and sea life are often sucked in and killed. This entire process endangers aquatic species, fish, herring, salmon, groundfish, marine mammals such as dolphins, orcas, humpback whales and birds including eagles. ducks, Canada geese, songbirds as well as afecting terrestial wildlife in the area. Water cooling has been outlawed in California on waters open to the Pacific Ocean, because of extreme environmental damage to the fish and sea life there. Chlorine expulsion along with the warmed sea water going into Howe Sound will certainly not be acceptable.	Seawater Cooling System	In LNG facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. California did not ban seawater cooling. Section 316(b) of the US Clean Water Act requires the Environmental Protection Agency (EPA) to issue regulations on the design and operation of intake structures, in order to minimize adverse environmental impacts[54]. The EPA brought regulations into force in 2014 that cover facilities that withdraw more than two million gallons per day (315 m^3/h) of cooling water. These regulations govern the controls that must be in place at new and existing plants related to entrainment and impingement of marine organisms. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m^3 (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited Response to Public Comments.	

[54] Source: http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

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1696(iv)	March 23, 2015	Robb Schultz - Bowen Island	4. Flaring off excess gas from the LNG plant and from storage tankers into the atmosphere causes unacceptable visual and environmental pollution.	Visual Quality Air Quality	As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — was undertaken to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria. Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met. The Project will also require a Facility Permit, Leave to Commence Construction and Leave to Operate from the OGC, as well as numerous other environmental permits. As part of the Facility Permit application, Woodfibre LNG must submit a summary of their flaring, venting and relief system design basis to the OGC for approval. The summary will include the following information; • The best practices, standards and guidelines for flaring and venting the proponent will apply to the design of the project • The alternatives considered to minimise flaring and venting with particular emphasis on normal operations, planned shutdowns, maintenance and start-ups • The design elements relating to measurement and reporting The OGC also refers proponents to their Flaring and Venting Reduction Guideline[55] as well as the Canadian Association of Petroleum Producers' "Best Management Practices for Facility Flare Reduction" (CAPP 2006). The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the regional assessment area. Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible. Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following: • reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours • monitoring and maintaining natural screening to ensure minimal visibility of infrastructure • providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola.	

[55] BC Oil & Gas Commission. 2015. Flaring and Venting Reduction Guideline Version 4.4. Available online at http://www.bcogc.ca/node/5916/download

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1696(v)	March 23, 2015	Robb Schultz - Bowen Island	5. Negative Recreation & Tourism Impacts to Howe Sound region Will Be Caused by the Woodfibre LNG Project. Howe Sound and its communities are welcoming targets for recreational destination tourism. With close proximity to millions of residents and visitors from Metro Vancouver, Howe Sound and the island community businesses depend on recreation and tourism throughout the year. For example Sea to Sky Gondolas have opened a year round tourist gondola, restaurant, suspension bridge and hiking trails by The Chief Mountain Peak near Squamish. The tourist view faces directly at the Woodfibre LNG Proposed Site. Recreational Tourism is the most important industry in our area. Tourist recreation to Whistler Mountain, Squamish, Lions Bay, the Howe Sound Islands and West Vancouver will all be impacted negatively by this LNG proposal. Recreational boaters who visit us are increasingly attracted to Howe Sound waters.	Tourism Recreation	Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example. An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy. The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.	
1696(vi)	March 23, 2015	Robb Schultz - Bowen Island	6. Real estate values in this area and specifically on Bowen Island will fall in the path of LNG Tanker routes passing along 25 miles of Bowen's shoreline.	Real Estate	The Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. Real Estate Value was not selected as a valued component in the environmental assessment of the Project as the Project site is zoned for industrial use and a change of land use designation and zoning is not required.	
1696(vii)	March 23, 2015	Robb Schultz - Bowen Island	7. West Vancouver, Bowen Island and Lions Bay Mayors and Councils have all passed resolutions against the establishment of Woodfibre LNG Processing and Export Project.	Public Consultation	Thank you for the comment.	
1696(viii)	March 23, 2015	Robb Schultz - Bowen Island	These are some of my concerns and questions for you to consider in evaluating the environmental and other impacts of approving this lengthy application. My Specific Questions to You: 1. When and how is the Woodfibre Environmental Impact Assessment Review going to address the negative impacts stated in my Specific Concerns above on the waters, fish, sealife, birds and other wildlife in Howe Sound?	EA Process	Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment. A public consultation report will be filed with the EAO in accordance with the environmental assessment process.	

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1696(ix)	March 23, 2015	Robb Schultz - Bowen Island	2. When and how will your review address venting, leakage and flaring of natural gas from the storage tanks, the plant and tanker ships, docked at Woodfibre LNG? Isn't recycling this gas into LNG preferrable to flaring it off? Will the proponent be required to recycle it into LNG again? If not then why not?	Flaring and Venting	The Project will require a Facility Permit, Leave to Commence Construction and Leave to Operate from the OGC, as well as numerous other environmental permits. As part of the Facility Permit application, Woodfibre LNG must submit a summary of their flaring, venting and relief system design basis to the OGC for approval. The summary will include the following information; • The best practices, standards and guidelines for flaring and venting the proponent will apply to the design of the project. • The alternatives considered to minimise flaring and venting with particular emphasis on normal operations, planned shutdowns, maintenance and start-ups. • The design elements relating to measurement and reporting. The OGC also refers proponents to their Flaring and Venting Reduction Guideline[56] as well as the Canadian Association of Petroleum Producers' "Best Management Practices for Facility Flare Reduction" (CAPP 2006). Any and all flaring for the Project will be via the single flare stack located adjacent to the liquefaction process facility on land; there will be no flaring from the LNG storage units or stationary tankers. Additional information on the characteristics of the flaring scenarios was provided to the EAO on March 20, 2015.	
1696(x)	March 23, 2015	Robb Schultz - Bowen Island	4. Is it preferrable to Air Cool the LNG processing plant and not water cool it? Are they being required to use Air Cooling? If not why not?	Seawater Cooling Process	In selecting a preferred cooling method, Woodfibre LNG Limited considered environmental effects, regulatory issues, and capital and operating cost considerations (e.g., maintenance, reliability, energy efficiency). Reliability and maintainability of heat exchangers is perhaps the most critical factor in the consideration of the preferred cooling media. Linde Group (2014) conducted a cooling study on seawater vs. air cooling, and WorleyParsons (2013) conducted a cooling media study on the following cooling media options: • air cooling • evaporative cooling • freshwater cooling from local streams • seawater cooling from Howe Sound Through this study, seawater cooling was chosen as the preferred cooling media. Seawater is one of the most abundant and efficient cooling mediums available[57]. Seawater cooling produces less environmental noise and visual effects than air cooling. During operation, it is preferable that the cooling medium be at a consistent temperature through the year. The seawater temperature fluctuations are less over the year than the temperature fluctuations of the air or creek water. In addition, Woodfibre LNG Limited would like to note that two of the factors that Woodfibre LNG Limited took into consideration when assessing alternatives was public concern about noise and visual effects from using air cooling. Additional information on the assessment of alternative cooling methods was provided to the EAO on April 23, 2015.	

[56] BC Oil & Gas Commission. 2015. Flaring and Venting Reduction Guideline Version 4.4. Available online at http://www.bcogc.ca/node/5916/download

[57] Thomas C. and Burlingame R. n.d. Direct Seawater Cooling in LNG Liquefaction Plants. Available at: http://www.ivt.ntnu.no/ept/fag/tep4215/innhold/LNG%20Conferences/2007/fscommand/PO_36_Thomas_s.pdf.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1696(xi)	March 23, 2015	Robb Schultz - Bowen Island	5. What experience does Woodfibre LNG have in designing, building, operating and financing an LNG Processing Facility?	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain.	
1696(xii)	March 23, 2015	Robb Schultz - Bowen Island	6. Will BC earn any Royalties and taxes on this project and if so, when will they accrue? If profits must be earned before taxes or royalties can be levied, what is to keep an offshore company like this from paying a minimal tax on Woodfibre LNG Pte Singapore offshore, thereby paying BC little or nothing? Is it true that the BC Government will earn no revenue for 15 years or longer or never?	Taxes	Woodfibre LNG Limited took ownership of the Woodfibre site in February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated $2 million per year during operation, should the Project go ahead. As with residential properties, property tax is paid on the basis of the assessed value of the property and the mill rate. The assessed value of the Woodfibre LNG facility will include the value of the floating storage and offloading unit. Accordingly, Woodfibre LNG Limited will pay property taxes to the District of Squamish on the full value of the Project. The Application includes information on the economic benefits of the Woodfibre LNG Project, should it go ahead. • $83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • $86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • $243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than $122.8 MILLION in GDP per year during operation. For more information see Section 2.6 Project Benefits of the Application.	
1696(xiii)	March 23, 2015	Robb Schultz - Bowen Island	7. What is this offshore campany's reputation for massive criminal tax evasion and avoidance? Why are we dealing with them?	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
1696(xiv)	March 23, 2015	Robb Schultz - Bowen Island	8. Apparently this plant will be located directly along an earthquake fault zone. Have they addressed this in their submissions. What will happen to this operation in the event of an earthquake and tidal wave?	Seismic Hazard	Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity. At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site. The Project will be designed: • For a one in 2,475 year earthquake. • In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants. • To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site • If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby. • Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek. • Buildings will be constructed at different elevations that correspond to their risk category in case of flooding. • Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction. • To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia. • Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. Project components will be designed to accommodate a sea level rise of 0.5 metres.	

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1696(xv)	March 23, 2015	Robb Schultz - Bowen Island	9. Summertime recreational marine traffic in Howe Sound is the heaviest. When and how will Woodfibre LNG provide your review, with a via Howe Sound and the other marine traffic as set out in my Specific Concern #1 above: "Transportation Conflicts Between LNG Tankers and BC Ferries, Pleasure Boats, "Transportation Conflicts Between LNG Tankers and BC Ferries, Pleasure Boats, Tug & Barge Traffic, Log Tows, Coastal Freighers, Cruise Ships in Howe Sound."	Marine Transport	According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. Section 7.3.2.3.4 Small Vessel Traffic of the Application includes data on recreational boating routes and destinations, and marine based tourism activities. The assessment of marine transport concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport. Examples of mitigation measures that will be implemented include: preparing and implementing a Marine Transport Management Plan, installing aids and navigational lights in the Control Zone based on the Navigation Protection Act review process, and notifying the relevant authorities so that Notices to Mariners and Notices to Shipping can be issued. Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight. The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound. Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects. Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited responses to public comments.	

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1696(xvi)	March 23, 2015	Robb Schultz - Bowen Island	10. What is the risk of a natural gas explosion and what would be the impact on residents and visitors to Howe Sound including fish and wildlife?	Safety	LNG has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours. The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments. The Public Safety information sheet describes the scenarios that were examined as part of the Application as well as the key mitigation measures that will be implemented to avoid or reduce Project-related effects.	
1696(xvii)	March 23, 2015	Robb Schultz - Bowen Island	11. Fracking extraction and sulphur removal for natural gas takes place before reaching LNG processing and export plants. What is the environmental impact?	Hydraulic Fracturing	Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project. Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system. Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site. Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.	
1696(xviii)	March 23, 2015	Robb Schultz - Bowen Island	12. What is the economic impact on real estate closely bordering an LNG Tanker route and nearby an LNG processing and export facility? These are some of my specific concerns and questions for the BC Environmental Assessment Office. My wife and family and I are seriously opposed to this project. It does not belong in Howe Sound for the reasons given and many more. Thank you for considering my concerns and answering my questions.	Real Estate	According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month (approximately 6-8 transits), which represents an increase of less than 1% in the annual large vessel movements in Howe Sound. The Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. Real Estate Value was not selected as a valued component in the environmental assessment of the Project as the Project site is zoned for industrial use and a change of land use designation and zoning is not required.	

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1697(xix)	March 23, 2015	Personal Information Withheld - Bowen Island, British Columbia	Who owns Woodfibre LNG? I would like more disclosure about the risks and benefits of doing business with a person with a questionable background, and past history of environmental abuse.	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.	
1698	March 23, 2015	Rose Dudley - Lions Bay, British Columbia	As a long time resident in The Howe Sound corridor, I continue to be horrified that our Provincial and Federal governments do not consider the need to protect this unparalleled area of beauty and seem hell bent on forging ahead with an LNG plant, the financial benefits of which is dubious at best. For years, industrial degradation destroyed much of the sea life but after spending millions of tax payers money we have witnessed the return of many species. We were so enthralled when one of our residents gave an informative lecture on the discovery of the rare glass sponges. The news caused such excitement amongst biologists from around the world. Clearly, such a find means absolutely nothing to our politicians. Shame on them all. Let's make sure, in the next election that we vote for the party which is prepared to listen to us and act quickly to protect our environment.	Value of Howe Sound	Thank you for the comment. Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship. An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.	

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1699(i)	March 23, 2015	Debra McBride - Squamish, British Columbia	I will first draw on the expertise of others: 1. SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound. Sources: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards 2. ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable. 3. HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's	LNG Project	Thank you for the comment. For a response to this comment, please refer to the "*Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions*", comment # 11-21, 45, and 46.	

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			environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs $42,000 per tonne, and nitrous oxides cost $67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change 4. SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing $500,000 – $750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released? Sources: http://www.cbc.ca/news/multimedia/every-fault-line-in-british-columbia-1.2919420 Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4 B.C. Ministry of Energy and Mines 5. ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of			

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			the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound? 6. CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general. 7. GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill. 8. ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has secured the water license to extract water from Mill Creek, which flows through the Woodfibre site. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else to protect this important stream habitat which is home to several native fish species. 9. ENVIRONMENT: Missing baseline studies			

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			The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project. 10. VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact viewscapes from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory. 11. ENVIRONMENT: 9000 year old glass sponge reefs endangered by tanker traffic LNG tankers do not have enough clearance to get over the 9000 year old reef if they go off course. These 9000 year old glass sponge reefs have been called "Living Fossils" by National Geographic as until recently this species was thought to have gone extinct over 60 million years ago. MLA Jordan Sturdy recently made a statement in the House about the importance of this discovery in Halkett Bay near Gambier Island, and to support the proposal to expand the Provincial Park Protected Area to ensure these reefs are protected. Sources: http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ , http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/ 12. ENVIRONMENT: Will there be smog? Will there be a smell? Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to			

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			irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels. Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstrict ion and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research by MSc student Annie Seagram (studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentratio ns of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma. In addition: the BC government needs to ensure the protection of the 9000 year old glass sponge reef at Halkett Bay off Gambier Island. About Glass Sponge Reefs: http://www.eao.gov.bc.ca/pcp/forms/Woodfibre_LNG_form.html Glass Sponge Reefs in Halkett Bay off of Gambier Island http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ MLA Jordan Sturdy spoke in Legislature about the glass sponge reef at Halkett Bay off Gambier Island. http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/ Tankers do not have enough clearance to get over the 9000 year old reef if any off course action happens.			

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1699(ii)	March 23, 2015	Debra McBride - Squamish, British Columbia	Transport Canada Dangerous Goods Dept. is not at all ready for LNG. In fact they now have a task force for rail and road. I have been a member of 2 Stakeholder Teams focused on the protection and restoration of salmon habitat. I include information and links for your convenience and ask that a similar project be implemented for the WLNG and Fortis BC applications. 2005 SALMON RECOVERY PLAN Entire Salmon Life Cycle $250,000 Pacific Salmon Foundation $2 million 5 year plan Cheakamus Salmon Recovery Squamish Nation and Stakeholders CERT C Cheakamus Ecosystem Restoration Technical Committee The Cheakamus Ecosystem Restoration Technical Committee (CERTC) website, provides information on Cheakamus ecosystem restoration activities. CERTC was formed in August 2005 in response to a train derailment and subsequent spill of sodium hydroxide into the Cheakamus River. CERTC's mandate is to understand ecosystem-level impacts and develop restoration and monitoring strategies for affected species to accelerate the return of the Cheakamus ecosystem to a pre-spill state as quickly as reasonably possible. CERTC Terms of Reference (pdf). CERTC recommends programs for implementation to the Cheakamus Ecosystem Restoration Steering Committee based on input from experienced professionals, external specialists, interested parties and the public. Both committees include representatives of: CN District of Squamish Fisheries and Oceans Canada BC Ministry of Environment Squamish Nation Thank you for your interest in Cheak amus ecosystem restoration. Comments can be made to CERTC at comments@certc.ca Fish Assessment Following the spill, B.C. Ministry of Environment (MoE) fisheries biologists, technicians and contracted staff documented fish survival and compared fish density information to available previous data.	Recovery of Howe Sound	Thank you for the comment. The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound. Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force. The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional. Woodfibre LNG Limited intends to perform additional remediation and ecosystem restoration in the Project area. Plans for additional remediation include the removal of approximately 3000 existing creosote-coated piles from the waterfront in the Project area, the creation of a Green Zone around Mill Creek, and the containment and closure of the on-site landfill. This work will be carried out in partnership with the local Streamkeepers Society and other relevant groups, where suitable so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application). Woodfibre LNG Limited acknowledges community concerns about the potential effects of the Project on the waters, and marine and plant life in Howe Sound and is committed to a Project that includes environmental stewardship. All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the *Fisheries Act*. The seawater cooling system will require a waste discharge permit under section 14 of the *Environmental Management Act*. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.	

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			Fish mortalities were collected from the Cheakamus River downstream of the spill, with activities including: Recording mortalities by species and location; Collecting length data to determine age classes of impacted fish; Collecting scale samples to further supplement brood year identification; and, freezing and storing of samples for further examination, if required. Fish Impact Assessment (MoE and DFO) (pdf) MoE Estimated Impacts on Salmon and Trout Populations: Chinook • 25% of juveniles from 2004 spawning population • 50% of 2005 spawning population Chum • juveniles not affected • 2005 spawning population not affected Coho • 50% of juveniles from 2004 spawners • 2005 spawning population not affected Pink • juveniles not affected • between 3 - 10% of 2005 spawning population Steelhead • 90% of mainstem juveniles from 2003 to 2005 spawners • 2006 and 2007 steelhead spawning populations not affected Estimated Impacts on Other Fish Ninety percent of resident fish in the mainstem Cheakamus River may have been affected by the spill including: Dolly Varden/Bull Trout Lamprey (2 species) Sculpins (bullheads - 2 species) Sticklebacks Juveniles rearing in tributary streams at the time of the spill were not affected. Benthos Recovery Presentation - Triton Environmental, 2008 (pdf). New! Benthic Invertebrate Recovery Monitoring Program 2005 Final Report (pdf) New! Appendices (pdf) New! Ecological Assessment		Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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			A screening level qualitative assessment of ecological effects has been conducted for CN to understand the potential effect the spill could have had on receptors other than fish in order to identify and target the need for ecosystem restoration activities. Given the broad scope of the project and the limited amount of available data (i.e., exposure data, such as concentration of NaOH in environmental media, NaOH ecotoxicity toward specific species) it is not possible to conduct a comprehensive ecological risk assessment for each species present in the ecosystem. The screening level assessment focused on the functions of populations and communities within the ecosystem. This recognizes populations are less sensitive than their most sensitive individual member and some effects may be observed at the population level without impairing the functions of the ecosystem as a whole. Qualitative methods using subjective ecological effects ranking categories, s uch as high, medium and low, were used to describe the likelihood of adverse effects rather than providing a numerical estimate of effects. To minimize subjective influence, the interpretation of ecological effects contain a clear explanation of the lines of evidence leading to the conclusions, including a description of the uncertainties and assumptions used. Additionally, matrices were used to provide a structured framework for the characterization of ecological effects. The assessment used existing information from baseline and monitoring reports and from previous scientific literature. This screening level assessment of ecological effects consists of three main steps: problem formulation, analysis and characterization of the likelihood of adverse ecological effects. Results from the ecological effects assessment will be used to determine the direction of future recovery efforts for other components of the Cheakamus River ecosystem. For more details, view the Ecological Final R eport (pdf) New! Amphibian Assessment – October 2007 (pdf) New! Study Design: Screening Level Assessment of Ecological Effects (pdf) Water Quality River Sampling Water quality professionals tested and monitored the following: Water quality in the Cheakamus and Squamish Rivers, August 5 - 8, 2005 Water quality in the Cheakamus during site remediation activities, August 10 - 26, 2005			

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			Water quality in the Cheakamus after rainfall events, August 17 - October 28, 2005 Monitoring was conducted over a variety of meteorological conditions and river levels. The parameters monitored included: pH and conductivity, sodium, total dissolved and total suspended solids, total and dissolved organic carbon. Results The Cheakamus River was cleared for recreation after 24 hours by Vancouver Coastal Health on August 6, 2005. Water quality downstream of the derailment site was determined to be similar to that upstream. Well Sampling Forty-eight wells within 100 metres of the Cheakamus River were sampled on August 6 and 7, 2005. The parameters monitored included pH and conductivity, sodium, total dissolved and total suspended solids. The sampling was coordinated by Environment Canada, Vancouver Coastal Health Authority, Triton Environmental Consultants Ltd., and Quantum Environmental Services. Drinking water from wells was cleared for drinking by the Vancouver Coastal Health Authority after 48 hours on August 8, 2005. No additional detailed water quality sampling is required. Water Quality Report – September 2007 (pdf) Water Quality Report Appendices – September 2007 (pdf) http://certc.ca/recovery_fund.shtml CERT C Stakeholder Team The Cheakamus Ecosystem Restoration Stakeholder Team (Stakeholder Team), established by CERTC, is a public advisory group comprised of representatives from interested organizations and individuals with local knowledge of and experience with the Cheakamus River. Presentations Overview of the Cheakamus River Large Woody Debris Stream bank Protection and fish habitat development project, June 2011 (pdf) New! Update on Cheakamus River recovery strategies and monitoring programs, March 2009 (pdf) New! Update on Cheakamus River recovery strategies and monitoring programs, January 2012 (pdf) New! Cheakamus River Sculpin Recovery Presentation to CERST - Fall 2010 (pdf) Adult Wild-and Hatchery-Origin Steelhead Returns to the Cheakamus River in 2009(pdf) Cheakamus River Bull Trout Radiotelemetry and Enumeration Program, 2007-2009(pdf)			

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			Role The Team helps coordinate and communicate comments and recommendations from interested parties to CERTC, and also receives updates on CERTC activities, as the information becomes available. All input from the Stakeholder Team is considered advisory in nature and final decisions regarding monitoring and restoration programs rests with CERTC and the Cheakamus Ecosystem Res toration Steering Committee.Stakeholder Team Terms of Reference CERTC Communication to the Stakeholder Team CERTC Responses to Dec 6 2006 Stakeholder Team Questions (pdf) http://certc.ca/public_events.shtml Events and Brochures. http://certc.ca/recovery_plan.shtml to 2012 SQUAMISH ESTUARY MANAGEMENT PLAN [PDF]Skwelwil'em Squamish Estuary Wildlife Management Plan https://www.fcm.ca/Documents/presentations/2012/SCC2012/Management_plan_skwelilem_squamish_estuary_wildlife_management_area_EN.pdf PDF]View the 1999 Squamish Estuary Management Plan http://www.squamish.ca/assets/PDF/3.14.4-Squamish-Estuary-Management-Plan-1999.pdf REPORT OF THE PLANNING COMMITTEE ON THE PROPOSED SQUAMISH ESTUARY MANAGEMENT PLAN Volume One and TWO THE PLAN September 1982 Volume TWO Pages 211 to 233 re: PUBLIC INVOLVEMENT WORK GROUP REVIEWS OF SEMP DRAFT 1982 https://www.for.gov.bc.ca/hfd/library/documents/bib50867-1.pdf https://www.for.gov.bc.ca/hfd/library/documents/bib50867-2.pdf PAGE 94 PUBLIC INVOLVEMENT WORK GROUP MEMBERS Squamish Estuary Nature Centre ad hoc Committee Squamish Council 1999 SEMP https://squamish.civicweb.net/document/10318/February%202,%201999 Page 19 Signatures to 1999 SEMP http://www.squamish.ca/assets/PDF/3.14.4-Squamish-Estuary-Management-Plan-1999.pdf			

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			https://www.for.gov.bc.ca/hfd/library/documents/bib88219.pdf 1982 TO 1992 SEMP! http://classify.oclc.org/classify2/ClassifyDemo?search-author-txt=%22Squamish+Estuary+Management+Plan%22 Howe Sound has also been improved because the Fraser Basin Council has successfully restored the waters at Britannia Beach on Howe Sound BC. http://www.fraserbasin.bc.ca/about_britannia.html Clean up after industry pollutes is never complete and restoration actually takes centuries. The economy here in Howe Sound no longer depends on big polluting industry. What is evolving is self-employment in businesses that depend on "the scenery". Like the film industry. Also tourist activities because HOWE SOUND NOW HAS WHALES! DOLPHINS! HERRING! Eagles and salmon have always drawn the public to the wilds of Howe Sound. People stay to live in a healthy environment and to co-exist with nature. There are economic benefits to all aspects from the sea, keeping the wild fishing industry to the sky where Whistler/Blackcomb are world class ski resorts with a growing population in what was once a village. Our proximity to Vancouver BC, also a source of employment, allows those who live in the Howe Sound area to park the car and enjoy recreating without it when not commuting to work elsewhere. The LNG Project needs to be assessed as a having a negative impact on a recovering Howe Sound. Many have written who have been able to study and report on the negative impact of the WLNG project, the Fortis BC pipeline and the gigantic tankers. For me this is a forced endeavor. I feel quite intimidated by the fact that the WLNG company can afford $250 million dollar fines for environmental atrocities elsewhere. It brings to mind that Woodfibre had 600 pollution violations that could have been charged against the owners and the government would not allow that to happen in 1983. When in 2005 Woodfibre was closed, there was a statement from the government that the Woodfibre site would never again be used for industry. The re-zoning never took place and now this is a legal application with deadly consequences. Global warming could have been avoided had alternative energies been used these last 40 plus years. I have lived here since 19 77 and I have enjoyed			

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			the transition to a Howe Sound that is recovering. Those moving to Squamish now, afford to pay hundreds of thousands of dollars to buy a small accommodation here. This isn't so as to return to dirty industry and the putrid polluted smell of money when industry has an "accident".			
1700	March 23, 2015	Personal Information Withheld - Lions Bay, British Columbia	Would like to know where is the safe resting place for a tanker in Howe Sound in case of emergency or bad weather? Is the safe spot away from the prehistoric reefs? and what potential damage could be caused to the ecosystem from the supertanker in the event of an emergency or bad weather?	Emergency Moorage	Thank you for your questions. The LNG carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Due to lack of specific LNG anchorages within Canadian waters, LNG carriers will delay or defer their passage into Canadian waters if it is apparent their regular turnaround cannot be maintained, either due to weather or unplanned maintenance needs on the vessel or at the terminal. In case of an unplanned maintenance event at the terminal that cannot be resolved while the LNG carrier is at the berth, the LNG carrier would be evacuated from the berth and escorted out of Canadian waters until the terminal issue is resolved or rectified. The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface. The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the glass sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. The glass sponge reefs are located at depths ranging between 20 m and 40 m at these locations. Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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1701	March 23, 2015	Personal Information Withheld - Squamish, British Columbia	I am very concerned about the integrity of the parent company RGE due to the media reports that they have been charged with tax evasion and that one of their subsidiaries called APRIL has been charged with Rainforest degradation. Is this a company that we should be supporting? Media links include: http://news.mongabay.com/2015/0203-april-false-forest-pledge.html http://www.theguardian.com/world/2014/may/10/asian-logging-giant-tax-labyrinth-british-virgin-islands http://aprilwatch.blogspot.ca/2013/08/ngos-welcome-forest-stewardship-council.html http://www.tcinewsnow.com/regional-New-report-calls-for-Britain-to-investigate-Caribbean-tax-havens-7125.html http://greenpeaceblogs.org/2014/07/08/busted-rainforest-destroyer-and-us-customers-exposed/ http://powellriverpersuader.blogspot.ca/2013/11/christy-clarks-newest-lng-investor.html http://commonsensecanadian.ca/woodfibre-lng-proponent-history-fraud-tax-evasion/	Corporate Ownership	The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish. Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain. Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company. Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.	
1702	March 23, 2015	Coast to Cascades Grizzly Bear Initiative - British Columbia	Please refer to the submission from the Coast to Cascades Grizzly Bear Initiative to the EAO dated March 23, 2015.	Effects of the Project on Grizzly Bears	Thank you for your letter. Woodfibre LNG Limited has prepared a response to this letter, which has been posted on the EAO website as 'Woodfibre LNG Limited Response to the Coast to Cascades Grizzly Bear Initiative Public Comment Submission'.	